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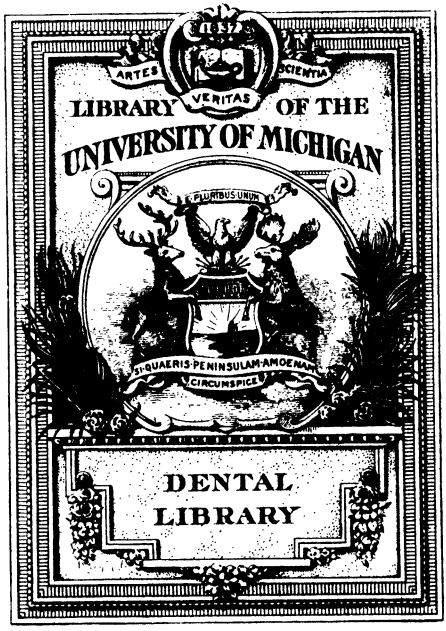
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The AMERICAN DENTAL JOURNAL

Edited By
BERNARD J. CIGRAND, M. S., D. D. S.

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Devoted to advancing the art and science of dentistry;
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The AMERICAN DENTAL JOURNAL

DR. BERNARD J. CIGRAND, Editor

Published on the fourth of every month by The Ross Dental Manufacturing Company.

Editorials and Comments

"The editor assumed charge of this journal with the signed understanding that he shall have absolute and unlimited control and supervision of the editorial and literary elements; this unusual grant makes it possible to render the profession an independent periodical; the title page clearly indicates the scope under the new policy of this old established journal."—*Publishers.*

DID A DENTIST PREVENT EUROPE FROM RECOGNIZING THE SOUTHERN CONFEDERACY?

During the darkest days of the Rebellion of 1861, when the tide in the affairs of men seemed to waft the confederacy to the front because of the great victories of the "stars and bars," it was a dentist, one of our own profession who played the part of an adept diplomat, and contributed wonderfully to the cause of our national salvation. He was residing in Paris where the practice brought to his hands the eminent of all Europe, and among the distinguished patients was the Emperor of France, Napoleon III. One day the ruler called on professional affairs and the conversation drifted to the defeats of the federal armies. Napoleon, after commenting on how the press of Europe was lauding southern victories, how the illustrations of the battles, the comments of European critics who were on the field of battle, were predicting eventual southern victory, the ruler added: "Dr. Evans, all seems to point to a southern republic, and I am urged to give the heroic southerns recognition."

This sentence must have brought consternation to the loyal mind of Dr. Thomas W. Evans; he scarcely knew what to say. In fear he

delayed for a moment, which seemed to be hours, then with characteristic promptness he added that the press of Europe was coloring the reports to fit or harmonize with their anticipations and hopes, and after a leave from the dental office for a promenade to the museums, a stroke of diplomacy on the part of the dentist changed all Europe. Napoleon and Dr. Evans were personal friends, and as he walked along with Napoleon they went by the place where the relics of Napoleon the First were kept and in passing by Dr. Evans pointed to the watch of Napoleon the First and called the attention of the Emperor to the fact that Napoleon was always known to wait for the latest information and to delay action until it could be obtained, and he said to the Emperor, "Let us draw a lesson from Napoleon's watch and delay your decision until you can find out whether the information you have received is true or not," and the Emperor said, "Who can I trust, who can I send to find the truth?" and the dentist said "Send me," and Napoleon the Third sent this dentist as the imperial envoy of France to go to Abraham Lincoln and learn the actual condition of affairs, after which Dr. Evans went back to France and reported to the Emperor that the tide of victory was setting towards the North and they would eventually triumph. If Napoleon had not listened to this dentist France and Spain and Germany would have recognized the South and England would have been only too glad to do so, because secretly and undermindedly she had already recognized the confederacy, and might not the war have gone on indefinitely for years, but for the intervention of a dentist who thus contributed so largely to the salvation of the Union?

Some months ago when your editor in a public lecture revealed this incident there was doubt expressed as to the truth of the statement that Evans came and interviewed in the French recognition of the confederacy. While history does not publish this splendid patriotic service the facts are that Dr. Evans did come and did do just what was proclaimed. To ratify the statement the following letter and correspondence from the Evans' descendants will be of invaluable testimony:

On December 28th, 1890, a reporter called and interviewed Dr. Evans on a number of important matters pertaining to his life and among the effects left by the late Dr. Evans, are found the following corrected article, evidently intended for publication. Through the courtesy of the family it is here reproduced:

"The extremely intimate relations between the Emperor and Dr. Evans enabled the latter to perform a great service to this country. No account of it has ever been published. During the darkest days of the war the Emperor Napoleon was anxious to recognize the Southern Confederacy. He had fully made up his mind to this, and had entered into correspondence with the English Prime Minister to secure the co-operation of the latter's country. Dr. Evans, who is one of the most staunch and patriotic of Americans, insisted upon the Emperor's making a delay of a few weeks at least. The doctor said: 'I will go to America and see Mr. Lincoln. I will visit Washington and learn the real truth of the situation. I know that the North must win. I believe that I can bring back to you evidence to prove this. You know that I have never deceived you, and that you can trust my report.'

"The Emperor, as a great concession to the demands of his old friend, agreed to the delay. Dr. Evans visited Washington, saw Mr. Lincoln, and obtained such assurances that he was satisfied that he could convince the Emperor that the Southern Confederacy should not be recognized. Fortunately the North had some tremendous victories during the doctor's absence from France, so the Emperor was willing, upon the doctor's return, to drop the whole matter. He placed in the doctor's hands at that time the correspondence which he had had with the English Foreign Office. If the famous doctor ever publishes his memoirs, these letters will make an interesting chapter."

Edward E. Webb, who has made quite a study of the civil war, was corresponded with and he sent your editor the following:

"His sympathies were strongly Napoleonic, and both the Emperor and Empress held him in high favor. He was a versatile man with a distinct talent for diplomacy, and such was the confidence reposed in him by Napoleon and Eugenie that he was entrusted with important missions to several courts.

"Possessed of keen powers of perception, penetration and comprehension, persuasive in conversation, a shrewd reader of character, quick to accommodate himself to any situation, absolute master of himself at all times, he rarely failed to accomplish any purpose upon which he had set his heart and mind.

"When Louis Napoleon returned to Paris after his exile in London he became a patient of Dr. Evans. The doctor's sympathise quickly went out to the claimant and there was no one in all that dark

period of his life, or in after years, to whom Napoleon opened his heart more freely, or to whom he went more frequently for counsel.

SERVED HIS COUNTRY WELL.

"It happened that, through his influence with Napoleon, the doctor was enabled to do his own country a most signal service at a time when it was in the throes of civil strife and its life hung trembling in the balance. Napoleon had determined to recognize the Southern Confederacy and was in correspondence with England on the subject when Dr. Evans went to the Emperor and pleaded eloquently the cause of the Union. 'Pray do nothing for a few weeks at least,' he said. 'Meantime I shall go to America and have a conference with President Lincoln. I have implicit confidence that the North will win, and I am sure that when I return I shall be able to convince you of this. You know I have never deceived you and when I come back I shall make you a truthful report.'

"Napoleon somewhat reluctantly agreed to defer action. Dr. Evans went to Washington and obtained from President Lincoln assurances that the rebellion must eventually be put down. When he was on his way back to Paris the North achieved a notable victory, so that he had little difficulty to persuade Napoleon that the Confederacy should not be recognized. Napoleon now saw clearly that he had been saved from the commission of a grave error, and he was thankful to the American for his services. Subsequently he placed in the doctor's hands the correspondence he had with the other governments.

"Dr. Evans was in the confidence of the imperial government when Baron Haussmann undertook the important work of making over the French capital, and, having implicit confidenec in the future of Paris, he invested largely in real estate. He assisted the Emperor to design and carry out the vast improvements about the Bois de Boulogne, and his own shrewd investments in the vicinity of this now fashionable park were enormously profitable, yielding him several millions of dollars.

"The beautiful and costly home which he built for himself in Paris was the scene of much social gayety and was one of the most interesting in the capital. He was one of the best known and most popular men in the city. All the principal countries of Europe conferred honors upon him, and the sovereigns and their families became not only his patients, but his friends as well. Many of them intrusted to him important secrets and called upon him for counsel in matters

of state. No other American was ever so implicitly trusted by royalty or filled so large a place in the world of private diplomacy."

The facts are not all brought to the surface and further research will bring evidently many surprises to the surface. Correspondence with all relatives, with the officers of the estate, as well as the Department of State of France, will doubtless yield further hidden gems as to what a dentist did to save these Union of States.

COMMENTS.

Many of our subscribers, among them experienced in dental publications, predicted when the July number, the first of the new series of the AMERICAN DENTAL JOURNAL, appeared that the high standard assumed by this periodical could not long continue. It was, we confess, a task, and the publishers and the editor would have surrendered before this, had it not been that an unusual increase of subscribers and advertisers had faith in the idea that the profession has looked and found a journal completely controlled by the editor and the subscribers. The Journal under this policy together with the principles for which it stands, namely that of serving the entire profession—rather than a mere locality, society or organization—has issued eight numbers with the result that the same scope appears in every one of the Journals: the character of its editorials, its special contributions, its foreign progress, its literary gems, its professional arena, its who's who and why and other special features have remained the same high standard and demonstrate the harmony existing between the policy of the Journal and the desire and demand of the dental profession.

It would certainly be a mark of inappreciation as well as an evidence of ingratitude if the editor did not express his heartiest commendation of the loyal support of the readers. Any word of praise, in this connection, to the contributors is also in good order. The publishers have, after considerable expenditure, brought the Journal to you promptly and the editor is eager to accord The Ross Dental Manufacturing Company the heartiest thanks for assuming to pay the bills and try out the venture that the dental profession is large enough, strong enough and sufficiently independent to manage the literary side of its progress without the interference of a trade house—other than in a supporting and not dictatorial sense. This is the first time in the history of the dental profession of America

that a dental journal has been thus independently operated. There may be some who doubt that the literary side of this Journal is positively in the hands of its subscribers and editor. To these, if there be such, we cordially invite most liberal and minute investigation.

If you know of a new or improved method of preparing to set a Logan Crown, manufactured by the S. S. White and Company; or possess a new or advanced idea as to employ a Davis Crown, the product of the Consolidated Dental Manufacturing Company; or if you have special records or successes with Fellowship Cement manufactured by The Dental Protective Supply Company; or if your practice has brought to the surface any heretofore unpublished equations of progress with any of the great variety of appliances, materials or medications manufactured or produced by any dental corporation doing business within the confines of modern civilization, send us your deductions and we shall be pleased to render your communication every possible editorial consideration and courtesy. Your article will not be cast into the waste paper basket just because you happen to recommend an appliance, article, material or medicine not manufactured, produced or prepared by The Ross Dental Manufacturing Company.

If this statement does not afford every possible evidence that the AMERICAN DENTAL JOURNAL is an independent periodical notating dental progress, please advise us how we can make it broader, more liberal and still more emphatically the voice and the hand of the dental profession as a whole. Your editor will not lend himself to carrying out the will or the whim of any clique whose purpose is of a selfish and non-professional purpose. Let the thought be imbued in the most retired recess of your residual memory that this Journal is absolutely and positively an independent, unhampered medium of dental exchange. Every subscriber has a right to be heard from; his single dollar which he sends into the treasury shall entitle him to a representation in its columns. We invite with all sincerity the cooperation of every dentist who has at heart the true welfare and scientific progress of the practice of dentistry, to send to us such phases of development as have come to the surface in his personal practice; contribute such matter as you are willing shall bear your name and further evidence will be given that the AMERICAN DENTAL JOURNAL is what it professes to be by its principles and policies as published on the cover page of every issue.

SPECIAL CONTRIBUTIONS.

MONOLOGUE.

AUDIENCE OF ONE.

Bad toothache? Why, yes. Just sit down in this chair.
Yes—take off your cap, drop it down, anywhere.
The lower? No? Upper? The right? This side, eh?
Please take out your fingers, your hand's in the way.
How long's it been aching? H-m-m. Looks pretty bad.
These bum six-year molars just make dentists sad,
You've left it too long. No. Too far gone to save,
No ease till you lose it. Sufe—big boys are brave.
How old are you, sonny? Nine? Come all alone?
Oh, that was your mother who called up by 'phone,
She couldn't leave baby, or she would have come,
She said, "tell the Doctor he must freeze your gum."
Why—yes, it will hurt some, but not very long,
A boy such as you is so brave and so strong.
Of course, you're not crying. The sun in your eyes
Has made them quite leaky? Just what I'd surmise.
I'm now going to pump the chair up—just so high,
And swing you—so—backwards. Yes. Sure, you won't cry.
Now open your mouth and hang on to the chair,
That's it, hold the arms tight, grab hold of them—there!
Unless you keep open I can't do a thing.
No—can't go back home and let Dad use a string.
Don't yell quite so loud, I can't hear myself think,
Just let me get hold, 'twill come out quick as a wink
And—there now—I've got it, but keep off your paws.
Great Scott, kid, d'you want me to break all your jaws?
There you go—you broke it. I don't care a "hoots."
Got the crown—that's certain. Only left the roots.

A. S. GREENWOOD, D. D. S.

THE SYSTEMIC TREATMENT FOR CARIES, PYORRHEA ALVEOLITIS, RIGG'S DISEASE AND FAULTY DEVELOPMENT OF THE DECIDUOUS TEETH.

BY GEORGE B. HARRIS, SC. B., D. D. S., DETROIT.

The treatment for Rigg's disease and pyorrhea alveolitis are very much the same. The one runs into the other and no sharp dividing line really exists. I will not go into the difference between the two at this time.

The treatment (systematically) is also the same in most respects to that for pyorrhea alveolitis; it being preventative in both cases.

In cases where caries are continually appearing, the cause is generally malnutrition, due to insufficient phosphate salts in the body. Iron salts have a very beneficial effect also. The best iron preparation is the tinctura ferri choridi. This should be given in a wine glass full of water containing one or two drops of the iron. In this form it has no damaging effect upon the teeth.

There are a great many official preparations of phosphate salts, making it entirely unnecessary to use proprietary preparations. Some of the most useful are:

Elixir Calcii Hypophosphitis (N.F.).
Syrupus Hypophitis Compositis (N.F.).
Elixir Hypophosphitum Cum Ferro (N.F.).
Syrupus Calci et Sodii Hypophosphitum (N.F.).
Elixir Hypophosphitum (N.F.).
Liquor Hypophosphitum (N.F.).
Syrupus Phophosphitum Compositum (N. F.).
Elixir Glycerophosphitum (N.F.).
Elixir Sodii Hypophosphitum (N.F.).

The dose of any of these preparations would be a teaspoonful twice a day, and should be kept up for a number of months, varying with the individual and the conditions present.

In cases of delayed eruption or improper development of the diciduous teeth the dried extract of the thymus gland will be found very beneficial.

The disintegration of the teeth in older persons may be checked very often by prescribing elixir of glycerphosphites of lime and soda.

In the treatment of pyorrhea alveolitis all deposits should first

be removed and all caries filled. There is no reason why this cannot be checked and cured. The permanency of the cure depends as much upon the care given the teeth after the operation as upon the operation itself.

Overeating and not proper mastication of food is very often the starting point and plays an important part in this disease, and should be carefully guarded against in its treatment.

The use of peptones would be found very valuable in producing a complete digestion.

Some of these bone-producing preparations should be taken constantly. Constipation should be carefully guarded against. Caustics should never be applied to the gums as they have a most disastrous effect.

Intestinal disinfects are also very important. Salol in five grain capsules given once a day will give astonishing results if persisted in.

The removal of all tartar is imperative, but we must not forget that the treatment does not end here. When we remove the tartar we are removing the effect—and, perhaps some of the cause, but by no means do we remove all the cause. If we wish to make our cures complete and give the best service possible, we must correct the faulty systemic conditions causing the conditions. Systemic treatment alone can do this.

AS WE GROW OLDER.

BY E. KARGAU, B. S., D. D. S.

Those of us who have been in the practice of dentistry long enough to be considered "old-timers" often pause in our daily labor to ask the question: "Is it worth while?"

There is nothing original about this reflection; doubtless men in every business and profession have put the same question. Yet in our case it is very pertinent. Who ever heard of a dentist growing rich from his practice, or even attaining independence? The older he gets the harder is it for him to keep in the front rank. As years go on and age comes upon him he finds himself at the same old grind, competing fiercely for the business that he gets and certain of nothing except what he produces with his own hands. His practice

scatters and he must forever be seeking new clients. In dentistry there is not the same loyal allegiance on the part of our patients as is the case in medicine, where it often amounts to fetish devotion. Families and their children's families stick to their doctor with a devotion that is almost religious.

Why does not the same condition obtain in relation to the dentist? The reasons are numerous. In the first place the laity do not recognize dentistry as an art comparable to medicine. The popular notion of dentistry is one of pure mechanics. The laity do not understand how vital is the relationship of the oral cavity to the general economy and therefore fails to credit the dentist's work with its true importance as bearing on their general health. The very phrase, "having my teeth fixed," indicates at once the trend of public thought. To them it is mechanics, a matter of rule. Consequently when a patient has his teeth taken care of, even if the work has been eminently satisfactory, his best comment is, "That man certainly did a good job on my teeth!" Yet even from this narrow point of view the laity are unable to appreciate the difference between good and bad dentistry. The only criticism they have whereby to judge is the presence or absence of pain, and the ability or inability to chew.

All this leads to one conclusion, namely that the patient is not bound to his dentist by the same devotional ties as he is to his physician. In other words, he does not class his dentist in the category as his physician. Consequently even a satisfied patient is no assurance that he will remain a loyal patient, for he is as likely for convenience sake to seek another dentist the next time.

Another point, the question of fees. It is a well known fact that among physicians fees have been regulated as if by common consent upon a set basis; especially for the general run of work, such as calls, office calls, obstetrical cases, etc. Barring surgical operations, fees are fairly uniform in certain localities. Furthermore it is rare that a physician will accept less than his average rate unless his immediate neighbors are likewise. Quite the contrary, the effort is always being made to raise the general rates.

However, in the practice of dentistry we find the fees ranging within wide limits. There is no certain recognized rate for certain classes of work. Furthermore the tendency is rife toward cutting rates, undoubtedly due to the invasion of the field by so many of the flagrant advertisers. It is a pity that the public continues to be

deceived by these quacks, who wring the hard-earned dollars from the public and give in return a mass of junk which means later more trouble and expense to the patient.

Reverting to the problem of the older dentist, we have another factor to contend with. It is this: The longer a dentist is in practice the more he realizes that in order to do good work and be just to his patients his mind must be concentrated on the work before him, and consequently he becomes oblivious of his patient. In other words the social communion between patient and dentist which is such an important factor in the young dentist's practice, becomes a distraction to the older dentist, which he must set aside in order to give his full attention to the work. Now the point is this. People as a rule like to be entertained while in the dentist chair. Their minds being diverted by little pleasantries and small talk helps to pass the time, and makes the ordeal less irksome. The young dentist always takes pains to develop this side of his relationship to his patient and consequently our patients have come to expect it always.

This point may seem trivial, but in the light of personal experience it is really vital, for we have found that, especially among our younger patients and those of the opposite sex, their preference runs to the young man who is entertaining, regardless of the quality of his work, and thus are the sons and daughters of our older patients weaned away from us.

And so the older dentist, as he grows on in years and sees his patients scatter and is compelled to compete with the ambitious young man whose fees are less and to combat the unappreciative attitude of the public in dental matters, pauses often to reflect, "Is it worth while?"

There is a remedy. One which will not only benefit the older dentist and make it easier for him to retain his old time patients, and will also elevate the profession in the eyes of the laity, and that is education. As well as physiology is taught in the public schools, so should the care of teeth and its importance be instilled into young minds. The public should know that the teeth are living organs having functions and diseases as vital as those of the internal organs, the proper care of which constitutes the practice of dentistry. They should know that the treatment of a tooth is more important than its crowning, instead of looking on it as an unnecessary, tiresome preliminary.

They should be made to realize that a dentist is something more than a mechanic, that he is as much a physician and a surgeon in relation to the oral cavity.

Furthermore, our dental schools must raise their standards to such a degree that only those shall be eligible as are qualified by educational standards and appreciate the high office of the profession. We must have fewer mechanics and more real "physicians" in the profession, for the laity judge us by our personnel. In such manner only can we hope to raise the standard of the profession to such a plan that we may truly be "Doctors of Dental Surgery," and recognized as such by our patients.

MOUTHS RESTORED WITH ENTIRE ARTIFICIAL SUBSTITUTES. HOW THE DIET AND HEALTH ARE AFFECTED.

BY B. J. CIGRAND, M. S., D. D. S.

In a paper before the Hayden Dental Society in 1897 I said: "The greatest possible good will result from an investigation of dietetics and dentures; the study of dietetics should be a part of the dental student's curriculum in order that he may learn of the influence of diet on the teeth." If we are to be practitioners of dental surgery, it is within our sphere to direct our patrons concerning their diet; we can do more for humanity by teaching them the purpose of prevention than by giving them the purpose of the cure. I believe the old saw that "An ounce of prevention is worth a pound of cure," should read, "A grain of prevention is worth ten pounds of cure."

The profession is giving entirely too little attention to the influence which the labor of the dentist has on the general health of the patients.

Strange as it may seem, I have observed that the motive temperament is the one most changed after depending upon artificial dentures. I have arrived at this conclusion after a most careful examination of the facts of the case. The deductions I have made are based on answers furnished me by people wearing full sets of artificial teeth. I have not projected a theory, and then gone forth to find material to prove it true, but have for years collected all possible notes, observed closely, and compared freely before I per-

mitted myself to form a conclusion. That change in diet of necessity changes disposition, if not even the temperament, I am thoroughly satisfied. Example of this we have at our commanad from comparative anatomy. The dog tribe desire meat as a food. If this is denied them and they are fed on bread and cereal food stuffs the dog propensities are shortly changed, and if the food first given him is changed for a period of years, his entire animal disposition has been re-created. If you again substitute for the cereal foods the meat diet, he will in several months return to his original inclination, and instead of being merely watchful and alert becomes ugly, disagreeable and even savage. And what is true of the dog is true of the feline tribe and other animal classes. To arrive at some definite knowledge as to what change takes place in people of the motive temperament who, like the dog, are inclined to meat eating, I have studiously inquired into this feature of things. For some fifteen years I have made it a practice to inquire of such of my patrons as wear full sets of artificial teeth (whether made by myself or not), the following questions:

1. In what particular has the wearing of artificial dentures affected the choice of your foods?

2. Have you observed that your disposition has in any sense been influenced by their use?

3. Have they interfered or aided you in your vocation? If so, state clearly how and why.

4. Mention any other features relative to your artificial dentures which appeal to you in connection with your change in diet or disposition.

From this source I have gained many interesting points. Nearly all of these patrons replied that they did not eat as much meat as previous to the loss of their natural teeth, that they observed that their sleep was sounder and that they were less nervous. One attorney wrote me, saying, "Before I had my teeth extracted I suffered for years from insomnia, and since I am wearing artificial substitutes, my sleep is splendid. I presume I must have been suffering from some form or other of neuralgia, for my teeth never gave me much pain, and the dentist who extracted them did so because the roots were not sufficiently strong to warrant bridge work." Now I am convinced that this attorney was cured from insomnia, not because of any disturbing tooth or annoying roots, but primarily

from a change in diet, he admitting to me that he was a heavy meat eater before he lost his teeth. The change in diet from meat to fruit and cereals was making it possible for his stomach and alimentary tract to rest and recuperate from the heavy strain of cooked meats. Besides, the reflex action of an over-worked stomach acted most decisively on the brain, and insomnia simply developed because of a repetition of mental disturbances. Besides, his life work being largely indoor and clerical, engaging the mental capacities and not having sufficient exercise to exhause this meat energy, he was destroying his nervous system by indiscreet choice of food.

That is one of the sins of city life. We eat more meat than our physical economy requires. In consequence a variety of mental and oral disturbances follow. People who eat an abundance of meat must indulge in vigorous bodily labor or they will suffer from uric acid absorption and possibly inaugurate pyorrhea alveolaris.

Many writers define a motive temperament or meat eating temperament as the bilious temperament. This is a mistake, since biliousness is nothing more than a disturbed liver and this ailment can befall anyone of the four temperaments. Biliousness is a symptom of disease, but cannot under any circumstances be the symbol of predominating quality of mind or body. This is what a temperament is, or it is nothing. It is an historic fact that General George Washington's disposition was markedly changed after depending on artificial teeth, poorly constructed as they were, for his life and energy. He was fond of meats and after the loss of his teeth was compelled to initiate a new diet. In his writings he tells us that even battles were delayed because of his indisposition, which was invariably an acute attack of dyspepsia. Repetitions of these attacks manifested themselves when he was president of the United States, and the strong, determined and courageous Washington of early Revolutionary times was changed into one of conservative, quiet and indisposed temperament. Tuckerman says, "We do not know how much we lost because of ill-fitting dentures which Washington was compelled to wear. His hearty appetite was gone and a more satisfied mood came within his being."

The mental temperament is also changed when depending upon artificial teeth, not so much because of a change of diet as because of a disturbance of nerve centers, since in the mental temperament nature has really made a person into a bundle of nerves. The very

presence of a lower or upper denture has an irritating effect upon the entire being of that person. A number of people who are of this disposition wrote me remarkable deductions.

A prominent attorney of this city says, "I am naturally nervous, and although my teeth give me no pain and rest comfortable, and are satisfying in every particular, they interfere with my thought. When I stand before a jury, fired to a point of sweeping conviction, my mind is occupied in the dual performance of speaking to my auditors and thinking of my teeth." So in this temperament the nerves, not the disposition, is purely mechanical. I will also recite to you an incident which occurred in my office some time since, which portrays a remarkable condition arising from the loss of teeth. In fact, I believe that the loss of teeth, which necessitates the severance of all the nerve centers connecting the roots must of necessity change the physical aptitude in these nerves in the brain. The amputation of upwards of sixty nerve fibers, one for each respective root of the thirty-two teeth, necessitates the trunk lines to become dormant, and this certainly affects the nerves of the head and face. I have had patients tell me that on the appearance of new fruit, such as apples, they would intuitively bite into them, forgetting their artificial dentures. This simply goes to corroborate what Doctor Steele says in his text book of physiology, that the brain never fully recovers the loss of severance of any nerve fiber. This he clearly exemplifies by the bold knight who, after having lost his left arm, in a heated moment of excitement left go of the reins with his right expecting to grasp them with his left.

The nation in which we live does not fully appreciate the underlying principles of the laws of proper diet. In no land under the sun is there such utter disregard of the standing resolutions of good health as pertain to diet than in the United States. The banquet boards throughout our country give evidence of gross violations of every tenet of physiology. In fact, the character as well as the manner in which most of the prandial is served stamps this epochal day in civilization little short of barbaric, and I am not so sure but that if we observed the dietary regulations of the animal kingdom, we might not return to the ancient records of longevity. But our government, like most of the governments, is intensely interested in the opposite condition of things. Any theory or principle which is advanced in favor of prolonging or preserving life does not

appeal to the central government. The legislative bodies, as well as the executive heads, are wrapped up in invention calculated to destroy and annihilate human life.

Recently the German government paid the fabulous price of 160,000 marks for the mere privilege of seeing the pattern of a destructive submarine cruiser. If the same inventor had discovered a panacea for Pyyorrhea Alveolaris, the disease which is threatening the existence of civilized population, the genius would not have merited even as much as an audience with the emperor. This condition is not alone in Germany, but all the so-called civilized nations share in this same English tendency. If you desire high pay for your toils and tasks, design some agent of death, and you will be quickly taken to the bosom of some congressional committee.

Was this the question, "What has the German empire done for Dr. Miller, and what has the French republic done for Pasteur, what has the English empire done for Williams, or what has our own country done for Black?" The present populations of the civilized world will never be able to pay the debt of gratitude they owe to the chemists, physicians, surgeons and scientists. The time and labor, say nothing of the financial loss which these great lives have sustained in their endeavor to wrest humanity from the ravages of disease and decay, the world will never know, since their humanitarian spirit forbade them from keeping an expense account. Is this justice, and where is the element of equity? The least that these governments might do would be to liberally pension them after two score and ten. If the governments were more concerned about the life of the citizens, and not so much after their commercial welfare, the word civilization might become a proper noun. How primarily wiser and better would be our grand republic if it had created instead of a ministry of commerce, a ministry of health.

The death rate from a variety of diseases inaugurated by dietetics is tenfold greater in this country, compared on an annual basis, than in any war, not excepting the Rebellion. This intelligent assemblage of specialists does not require a detailed account nor lengthy elaborations on the effect that oral and dental diseases are having on the disposition and destiny of our people. If the cabinet contained a secretary of health, and the general government at Washington inaugurated there a trained service of dental and medical specialists department calculated to direct our people in the choice of their foods

in the changing seasons, and studied consumption, Pyorrhea Alveolaris and other ravaging and man eating diseases due primarily from indigestion or ignorant choice of foods, we would grow strong and athletic as the Romans of old. For we must appreciate the fact that no nation has greater fortitude than she has strength stored in her soldiery.

The recent war with Spain clearly demonstrates the low par of the American in his physical being as compared with that same American who enlisted in '61. And why is this? Careful study leads us to the answer. The present population of the United States is surging towards the cities, where they grow up confined in their bodies and restricted in their appetites; the corruption of the air completely changing their physical being; the pollution of the waters and the impure foods and vegetables acting as confederates in this city of destruction. The result was when the war was declared the bulk of the enlisted boys came from the precincts of over-crowded and congested cities, while in the Civil war the boys rushed forth from the farms, hardy, strong, vigorous and athletic. I need not emphasize to you the great army of boys who were refused enlistment in the war with Spain. Thousands of them were cast aside because of their imperfect dental organs, these 88 per cent coming from the cities. This aids in corroborating that not only was their physical being below weight and measurement, but their life of haste, hurry and hustle, together with the five-minute lunches, has destroyed their powers of mastication. Truth is oft stranger than fiction, for the comparison of soldier boys of '61 and '98 verifies this old adage. These cold facts tend to rouse one to a better appreication of the laws of nature, for no man violates these without paying the full penalty. There is no mediating judge, no compromising jury, no changing or deviation. The decree of Providence comes and is fulfilled.

SOVEREIGN AND FAMILY GET SAME TREATMENT AS ORDINARY PATIENTS DO.

Richard Rauschenbach of Dresden, Germany, court dentist of Friedrich August III, King of Saxony, is in St. Louis, visiting his first cousin, Mrs. Lena Dougherty, 4400 West Belle place. He is on a tour around the world for pleasure and study, and is accompanied by Fritz Fischer, also of Dresden, who is visiting relatives

in St. Louis. They arrived Wednesday and will depart Monday evening. King Friedrich August has three sons, George, Friedrich Christian and Ernst Heinrich, and three daughters, Margarethe, Maria Alix and Anna Monica. Mr. Rauschenbach is charged with the care of the dental equipment of all these, and all have come under his treatment.

"In Germany they do not call a dentist 'doctor,' as they do here, unless he has taken the doctor's degree," said Mr. Rauschenbach yesterday. "The ordinary dental graduate is simply a 'zahnarzt,' which is German for 'tooth doctor.' Here any man who has taken the degree of D. D. S. is a doctor.

"This is my second visit to the United States. I was in this country twenty years ago, while I was studying my profession in Wisconsin. At that time the dental colleges of the United States completely eclipsed those of Germany. Now Germany's dental colleges are as excellent as those of the United States.

"Dental practice here and in Germany is identical. The same tools, appliances and methods are used. When any member of the profession makes an invention or an improvement in practice the dental journals and the dental associations soon make the improvement the common property of the profession.

"The king of Saxony and his family come to my office for treatment precisely the same as any of my other patients. I do not go to their homes. In treating them I use the same tools and equipment. Even the linen I use with them is the same as that used for my other patients. When a king gets into the dentist's chair he becomes just a man. He wants relief of some kind, and the methods that have been proved on the ordinary patient are the methods applied in his case.

"Have I ever pulled a king's tooth? My, no! Conservation of the teeth of the king is my principal care. The tooth-pulling dentist is the old-school practitioner. Any old dentist can pull a tooth, but it takes a good dentist to keep his patients' teeth in such condition that they will not have to be pulled. While I am away my practice is in the hands of professional friends."

SPECIFIC CAUSES OF CARIES AND SO CALLED EROSION IN HUMAN TEETH.

BY J. OXFORD KELLER, D. D. S., CHICAGO.

A paper by the writer in the January number of this journal, gave thirteen reasons, why the Black & Miller's micro-organic theories of decay are miscrobic errors. With good reason and sound logic, it shows that lactic acid can have no part in tooth decomposition. My great paper in the December number, 1910, says "There can be no single, lone acid or alkaline tooth decomposition. The chemical constitution of human saliva forbids." (See page 687.)

The foregoing proposition is tenable because direct lactic acid disintegration could not result, until enough of this acrid agency forms each day in the mouth to first neutralize the one quart of most always alkaline saliva which flows into this cavity every 24 hours. One quart of such saliva, will neutralize many times as much lactic acid as may obtain by oral lactic acid fermentation during its flow. Even with excess lactic acidity, there would be lactic acid salts, say potassium lactate neutral salt, which with the excess lactic acid, would cause neutral salt-acid decay. Hence there can be no lone direct, lactic acid tooth decomposition.

The writer has consulted all the scientific dental literature, which he could find, and has been unable to ascertain that any physiological chemist, ever found even a trace of lactic acid in human saliva, in the mouth. Even W. D. Miller, in his 230 pages on "Human Micro Organisms in the Mouth," does not show that he even found a trace himself, but states that traces of lactic acid had been found in the oral fluid but not more than a trace and does not state by whom found.

Black in all his many pages in his operative dentistry, discussing caries and the Formation of Poisons by Micro-organisms, makes no attempt to give a quantitative analysis of human saliva for lactic acid, to which he ascribes sole caries causes.

Caries Causes Difficult.—Decay in human teeth has had many causes ascribed during the last 3,000 years, showing that it is no easy problem. The ablest alchemists and physiological chemists ever since 500 years B. C. have formulated various causes for this malady. 456 years B. C. Hippocrates designated, "The stagnation of depraved juices in the teeth as a cause of toothache, preceeded by tooth rot."

During the last 2,000 years, other causes have been assigned, such as, "Disturbed Nutrition, Inflammation, Worms, Putrefaction, Mortification, Chemical Dissolution, Parasites, Electrolytic Decomposition. Chemico-parasitic causes (micro-organic lactic acid decay advocated by Black & Miller)" and lastly Keller's Neutral Salt, Neutral Salt-acid and Neutral Salt-Alkaline Salivary agencies.

Why Specific Causes Difficult.—It should be observed that both in Alchemy and physiological chemistry, each so called discoverer, ascribed a single lone cause for tooth decomposition. The idea never seemed to enter the minds of any of the many able men who have studied this problem of the ages past, that there might be several classes and thousands of individual kinds of tooth decay.

Miller, Black, Kirk and Williams each ascribed caries causes to result from micro-organic lactic acid decomposition. Yet they evidently knew that there are many kinds of tooth rot but never attempted a classification. If they had made a classification and then proceeded to do some original classified research work on such lines, by making experiments with salivary salts made by chemical processes, then they would soon have discovered the real specific causes of the malady in question. The fact that there are many different physical and chemical characteristics in decay processes, alone should have suggested an investigation for classification. Classification is logic and classified discussion and investigation begets constructive logic. Applied constructive logic, in accordance with the process of pure reasoning, begets discovery.

Miller's Mistaken Logic.—Miller's micro-organisms of the human mouth, pages 205 and 206, asks.

"What is the cause of dental decay," and then gives the following answer.

"Dental decay is a chemico-parasitical process, consisting of two distinctly marked stages: Decalcification or softening of the tissue and dissolution of the softened residue. In the case of the enamel, however, the second stage is wanting, the decalcification of the enamel practically signifying its total destruction. . . . . .

"The presence of an acid reaction in caries centers may be easily determined by the simple test with blue litmus paper. The test should not be made at the surface but in the deeper layers after the remains of the food and outer layers of carious dentin have been removed.

Two hundred and thirty cases, showed two hundred and twenty-five acid reaction, four neutral and one alkaline."

Bad Logic.—Of course the outer layers of carious dentin would show alkaline reaction in most all cases, because soaked with free and fresh saliva, which most always has chemical alkaline characteristics, in about such order as above reversed. The true logic of conditions is as follows: The saliva first to permeate the deeper portions of the cavity, is charged with the potassium and chlorine salts such as potassium, sulpho-cyanid, chlorid, carbonate, sulphate and phosphate, either one or more or all.

This saliva comes in contact with dentine, partly decomposed or not, at bottom of the cavity. Its concentrated potassium salts contain one equivalent of above acids. The dentin also contains one equivalent of the acids in its lime phosphate and carbonate. The potassium element in the salivary salts, has a higher affinity for the carbonic acid in the lime salts of the dentin than said acid has for the lime with which it is in chemical union and the acids of the salts because of their higher affinities for the phosphoric acid in the lime phosphate, hence by double chemical reactions, the potassium element will combine with the carbonic and phosphoric acids in the tooth bone, liberating its own acids, which, with the neutralized lime salts, will form different layers of carious dentin, surcharged with the various acids, which may from time to time, with the potassium element, combine and form the salts found in the salivary secretions.

It is these carious processes of dentin, surcharged with acids in the deeper layers in the cavity in which Miller made contact with litmus paper, showing of course, an acid relation, notwithstanding the decay process was produced by a neutral or neutral salt-alkaline agency in the saliva. The fact that such decays most always have the physical and chemical characteristics of alkaline decomposition, shows most conclusively that the destructive work is not the result of acid disintegration.

These chemical reactions which must always take place in tooth decay, shows that both acid and alkaline agencies are concerned in carious processes, and that there can be no lone acid or alkaline rot in human teeth. The chemical constitution of the saliva is such, that both of these destructive agencies either neutral, or with excess acidity or alkalinity do the deadly work of destruction. It is these classifications and many kinds of decays, and various combinations of decay

processes, which has made the problem of caries causes, so difficult of solution.

Imaginary Lactic Acid Decay.—A careful research and investigation of all the scientific dental literature which the writer can find, including Miller's Micro-organic life in the human mouth, Black's Formation of Poisons by Micro-organisms. Black's two large volumes of operative dentistry, and dental magazine works, show that only traces of lactic acid has been found in the saliva. Black has never essayed quantitive analysis for lactic acid, nor for lactic acid at all. Miller does not say that he has found lactic acid in human saliva in any percentage. Both he and Black depend for information as to lactic acid at all in the oral fluids on the investigation of others. Furthermore, they do not say by whom lactic acid has been found, even in trace percentages. They seem to depend more on the fermentative processes out of the mouth. Because carbo-hydrate and other ferment products are lodged on the teeth, in their dents, depressions and cavities, which produce lactic acid fermentation out of the mouth, they assume that lactic acid forms in the mouth by micro-organic processes in such quantities and strength as to cause decay in the teeth, regardless of the percentage of these ferments found in the oral cavity. Therefore, lactic acid decomposition in the teeth is an imaginary agency. Way back some 30 to 40 years or more some physiological chemists may have discovered traces of lactic acid in human saliva. Ever since acid has been charged with disintegrating phosphate cements. Then Miller discovered, it seems, that the micro-organic germ, streptococcus, cultures lactic acid by fermentation, hence the imaginary micro-organic lactic acid tooth decomposition.

Miller's Micro-organisms of the Human Mouth, page 110 Ed. 1890, contains as follows: "The greatest amount of lactic acid which I have as yet observed in lactic acid fermentation is (0.75) three-fourths of one per cent."

This means with fermentative processes out of the mouth, and with specially prepared fluids, so as to gain the highest percentage of this acid product. All the conditions of heat and materials were used so as to gain the highest results. From 24 to 72 hours' time was allowed. Such mouth conditions are remarkably absent. There is no careful selection of fermentative materials. The individual devours all kinds of foods. He eats after meals and drinks between drinks. The masticatory friction of one meal or drink may remove all the remains of

the preceeding one. At most, not to exceed a few grains of fermentative material say 5 to 10, can remain in the mouth, between the teeth or in their cavities or interstices, during the masticatory friction of several meals. This develops but a trace of lactic acid. The ablest physiological chemists have been unable to find even a trace of lactic acid. In the face of these indisputable facts, it requires hard logic to argue that said acid is even an assistant cause of rot in human teeth.

Notwithstanding his recent statement in his operatice dentistry, that lactic acid is the sole cause of caries, Black, more than a quarter of a century ago, seems to have divined, that there might be other causes of the disease. Black's Formation of Poisons by Micro-organisms, page 162 Ed. 1884, says:

"It is by no means probable that this is the only organism (referring to Millers streptococous germ) that may stand in a causative relation to caries. The organism of butyric acid fermentation, possibly that of acetic fermentations (acid of vinegar) may cause decay; nor is it by any means a settled fact, that decay of the teeth may not be brought about in part by other vital processes (chemical alkalinity) than the acid fermentation. Of this, however, we will speak later.

But a careful review of the succeeding pages of his book reveals no further discussion of this other agency. Matter in parentheses in above quotation were supplied by the writer.

There is no doubt, but that lactic acid does form in the mouth because all the conditions of ferment material, and heat are favorable; but the fact that for generations, the ablest physiological chemists, have been analyzing the salivary fluids and blood, and do not report finding even a trace of lactic acid or lactate salts, shows that it is very difficult to detect even traces of lactic acid in the salivary secretions.

Because of the traces of lactic acid in the saliva, in solution and association with potassium, sulphate, phosphate, carbonate, and sulphocyanid, makes it very difficult to test for this acid. In fact it is almost impossible because of the different reactions and effects of these different acids and salts on litmus papers, to formulate even a trace lactic acid test.

Lactic acid alone in a solution with no other acids or salts can be easily tested even in trace percentages. No wonder that the ablest chemists have missed it in their analytical work with other acids and salts, and that there were not even traces found in the mouth. This is in accordance with the logic of conditions clear through.

The foregoing logical conclusions shows most certainly that lactic acid can have no direct agency, in tooth decomposition. There can be no lactic acid decay. Even in the most extreme lactic acid development in the oral cavity, with much more than enough to neutralize the one quart of human salivary flow each twenty-four hours, the decay process would be a neutral salt-lactic acid caries.

Furthermore, if there can be no lactic acid decay, the only other chemical agencies in the mouth are those indicated in the proposition. "That all human saliva, contains within itself chemical agencies of tooth decomposition. They are Keller's Neutral Salt, Neutral Salt-acid and Neutral Salt alkaline decays which break down tooth structure.

Oral Prophylaxis.—Most all dental literature during the last thirty or forty years, discussing Oral Prophylaxis, has been on the basis that caries causes, results from Micro-organic lactic acid decomposition of lime salts of the teeth. If this proposition is erroneous, as is shown in this series of papers on decay, then there has been much error in such literature. Oral Prophylaxis can not be properly formulated, except with a true knowledge of the physical and chemical causes of this malady.

When this series of papers is completed and the able men of the profession, study, learn, and advocate these causes, then the writer will devote about one year of hard work, formulating a paper on Oral Prophylaxis.

ALVEOLAR PYORRHEA AND ITS TREATMENT.

(Continued.)

D. D. SMITH, D. D. S., M. D.

WHERE PYORRHEA BEGINS.

Not all teeth in any one mouth are ever the subject of pyorrhea. It is the strong, healthy teeth with living pulps that are specially subject to pyorrheatic attacks.

The inflammation of pyorrhea, for it is but an inflammation, begins in the tissues at the cervix of the tooth, more commonly on the lingual or palatine aspect between the molars. It may begin at any inaccessible or uncleaned point around or between the teeth.

In the anterior parts of mouths which are the subject of some care, the point of attack is usually at the interspace between the right lower cuspid and lateral or it may occur one tooth further back, between the cuspid and first bicuspid. The reason for this is found in the inefficient methods of cleansing at this point on the part of the patient. Using the right hand, the brush is passed over the incisors, then onto the teeth on the left side, whence it is turned to the right side of the mouth, leaving one interspace and usually one tooth untouched at the point mentioned.

Teeth that have been devitalized in comparatively young life, if the roots have been properly treated, are virtually, if not absolutely immune. This is due to the fact that cemental structure can not be solidified or changed (as into dentin) *after the devitalization of the pulp.* The cementum of devitalized teeth is frequently increased in thickness by an external deposit of bone like substance laid down by the pericementum, but this is never solidified as into dentin, as is sometimes the case with the original layer of cementum on a root with a living pulp. Exostosis, a deposit of this kind, is found more frequently on devitalized roots.

In very few cases have I ever witnessed the loosening and destruction of an entire set of teeth as a result of pyorrhea. With the loss of a pyorrheatic tooth (much more a considerable number of such teeth) there is a marked decrease in the virulence of the inflmmation, there is also a lessening of the inflammatory exudates. These facts point unmistakably to the infection of pyorrhea as a purely local

infection. Other proof is found in the movement of the tooth; it is always outward away from the point of inflammation, as in an effort to expel the irritant, the tooth, from the mouth. A tooth is never forced by the pyorrheatic inflammation toward the center of the mouth, it is always in a direction away from the center.

Rapid elongation, protrusion or rotation of a tooth—movements at times attended with considerable force and an irritating pain—indicate that the inflammation has attacked the cementum and pericementum. There is, however, in no case a *general* involvement of these tissues; the inflammatory action is limited to the point of active infection and this is usually at the cervix on the palatine or lingual aspect of the tooth.

The experienced observer may plainly discover a mouth infection leading to pyorrhea, which originates in careless and slovenly *attempts* for dental operations, mainly on the part of the younger men.

The inefficient preparation of roots, misfitting crown and supports for dental bridges, together with fillings inserted over decay in carious cavities, the ignorance and indifference displayed in the preparation of cavities, lack of care in the finishing of fillings, specially where these inefficient operations are attended with the utter neglect frequently encountered, without the prophylaxis treatment demanded of the operator, are potent and prolific sources of mouth pyorrhea.

These untoward conditions with the advent of the commercial spirit in dentistry are increasing in frequency and should be checked.

The challenge that more disease is engendered and more teeth ruined through ignorant, unwarranted, sometimes malicious interference on the part of dental manipulation, than are permanently saved by an educated, intelligent, skilled practice, we believe may be successfully made. How can these conditions be averted except through a better education on the part of our so-called colleges, and a more conscientious and professional practice on the part of our young men?

The destruction of tissue in pyorrhea has been characterized as "molecular necrosis," and this is well. Molecular necrosis is confined to surface tissue; there is no zone of dead tissue exfoliated as in ordinary cases of necrosis of bone. The real cause of the surface necrosis of alveolar tissue is the arrest of nutrition by the inflammation through the infection which is upon the teeth. That nutrition is

partially if not entirely suspended is plainly evident from the retarded circulation seen in the tumefaction and purple color of the gums. The progress of the necrosis can only be stopped by the arrest of the inflammation and the reinduction of normal nutrition. All remedial efforts should therefore be directed to this end. For promoting health in the mouth no one thing is so important as to care for the physical condition of the teeth themselves.

SERUMAL DEPOSITS.

So-called serumal deposits sometimes found on the roots of teeth in pyorrheatic pockets, represent a condition of mouth infection worthy of special mention. Although differing in character, chiefly in solidity, from other extraneous solids found on the teeth, serumal deposits are as truly sedimentary matter from mouth fluids as the salivary incrustations found at the cervix or on the more exposed parts of the teeth. They are not, they can not be a product of the pericementum or any other tissue of the teeth. These deposits are more commonly, almost exclusively in connection with single rooted teeth, especially such as have a physical conformation favoring the induction of pyorrheatic deposits. I have observed these concretions more frequently on bicuspids, especially such lower ones, as have large bell shaped crowns, marked cervical constriction and in every instance a conical or some irregular formation of root.

A noticeable characteristic of serumal deposits is the apparent sudden development and the unlooked for extent of the pyorrheatic pocket. This coupled with the fact that the condition is sometimes difficult of diagnosis has led theorists and writers, limited in observation, to contend that serumal deposits are an excretion of the pericemental membrane, thrown out at some point between a zone of healthy tissue at the cervix and one of like character at the apex of the root. This, however, is not the case.

Serumal deposits are not the occasion of any violent inflammatory action but they destroy completely the life of the cementum and pericementum; this result renders it impossible that they or any other deposits on the roots of teeth can be exudates of the pericementum, for *dead tissue yields neither exudates nor secretions.*

Serumal deposits are hard, smooth, highly colored coatings of calcic matter firmly adherent to the root on which they accumulate, and usually when noticed they are deep in pyorrheatic pockets. They

consist of sedimentary matter and debris gathered from viscid mouth fluids, especially the mucus, Through stagnation and inspissation this serumal matter is cemented to an individual root with great firmness while the compression of the gum over the pocket tends to keep the deposits smooth and polished, rendering it less irritating and more difficult of detection. The dark greenish color of these deposits is given by the stagnant mucus or other fluids confined in deep pockets. The deposits through inspissation of confined fluids accumulate until the alveolus separates from the root, in some instances, throughout its entire extent. In many cases the presence of serumal deposits can only be determined by the thickened congested condition of the overlying gum tissue—a characteristic of this infection; by the pus which exudes under pressure, and by the persistent movement of the tooth, in a direction opposite to the accumulation; (the accumulation is always on the inner or palatine or lingual aspect of the root).

The treatment for serumal conditions is exactly the same as in every other pyorrheatic condition—*it depends first on removal of the cause by local instrumentation,* and second the treatment of the resultant pathological state as the case may demand. There are no constitutional conditions involved, hence local treatment alone is indicated. The removal of these hard, smooth deposits deep in the pockets is often a most difficult operation. The touch is the only guide and failure to detect this hard, smooth matter on the root is very common. Due to this fact alone a large percentage of teeth having serumal deposits of long standing are of necessity doomed to extraction.

THE TEETH MORE A CONVENIENCE THAN A NECESSITY.

When we scientifically analyze the office work of human teeth in the digestive process we shall find them far less a necessity in their entirety than has hitherto been adjudged. In reality the teeth need play but an inconsequential part in that *necessary preparation* of foods for stomach digestion. This statement, so contrary to common conception and opposed as it is to all previous education, may at first seem absurd, but when seriously considered, it will become evident that while lack of mastication by the teeth, may interfere greatly with our convenience and pleasure, yet in no true sense can the mastication of food by the teeth be classed among the *necessities* to digestion. Foods may be perfectly prepared for the human stomach and all the digestive processes, without the aid of teeth. This fact stands out

clearly and convincingly when we consider the sick, or when we look into the mouths of the old people of today. The sick and convalescent are commonly nourished with foods requiring no tooth mastication. Many of the old people are found with edentulous mouths, *having regained general good health following extraction of all the teeth;* others are using artificial substitutes so imperfect in adaption that they sustain about the same relation to good natural teeth that an artificial limb does to a natural one. Comparaively few have kept any considerable number of natural teeth, in a state of usefulness, until old age; and yet in all these imperfect and inadequate conditions there is little recognition of loss or any complaint respecting inability of mastication. Good, serviceable natural teeth, coupled with vigorous health in old age, is not a general rule, but the reverse of this, few or no natural teeth, and good general health in old age is a common condition. Extensive grinding surface is by no means a requisite for successful mastication, especially for cooked foods. The urgent demand should rather be for the free and comfortable use of such teeth as may be made and kept aseptic and serviceable. One important requisite for the avoidance of chronic digestive and other complaints, is a mouth with teeth free of septic infection, hence to rid the mouth of septic pyorrheatic teeth is by no means an unmixed evil.

PYORRHEA A CAUSE OF CONSTITUTIONAL DISTURBANCE, NOT A RESULT.

Alveolar pyorrhea has of necessity a history of antecedent, long standing, septic mouth conditions; this state of the mouth is not the result, but the unimpeachable cause of many serious systemic diseases, the origin of which is not only generally unknown but wholly unsuspected. The diverse local manifestations, such as displacement of the teeth, the turning of them in their sockets, the formation of pus pockets beside the roots, the loosening and final exfoliation of these organs, are but minor sequelæ in comparison with the dire constitutional manifestations seen in the slow, chronic constitutional disturbances.

THE GRAVITY OF MOUTH PYORRHEA NOT RECOGNIZED.

The gravity of states and conditions resulting from pyorrhea in the mouth has not yet been recognized, much less comprehended. If the effects of pyorrhea were confined to its ravages in mouth tis-

sues—necrosis of the alveolus and exfoliation of the teeth, etc.—it would be of inconsiderable importance; but the pernicious emanations from twenty or more square inches of infected tooth surface, carried more or less directly into the circulation, and this augmented by the inevitable ingestion of mucoid toxins—pus and other pyogenic products which result from the disorder—develop constitutional states of serious import. If better understood mouth pyorrhea would no longer be treated with comparative indifference as at present; on the contrary, it would awaken a feeling akin to alarm.

Inflammation in the mouth differs from inflammations and diseased conditions in other parts, in that the septic products are discharged directly into the oral cavity, whence they pass into the digestive tract. Both medicine and dentistry at present stand helpless in the presence of this grave local condition.

Clinical observation shows the confluence of alveolar pyorrhea with rheumatism or gout to be infrequent, and if associated at all it is as cause and effect—pyorrhea the cause and rheumatism or gout the effect; a condition exactly the reverse of that of the "gouty diathesis" theory.

The conjunction of pyorrhea and renal complications is far more common and serious. Bright's disease in some of its manifestations is quite commonly associated with mouth pyorrhea. This, I believe to be due, in part at least, to the presence and the necessary ingestion of inflammatory products *disengaged in the mouth.* In all cases of pyorrhea, septic matter is mixed with foods and drinks and inevitably washed with them into the stomach. And here again may be seen the relation of cause and effect—pyorrhea the cause, renal complications, more commonly diabetes, the result. It has been repeatedly noticed that cure of the pyorrhea has had a marked effect on the diabetic state.

The infection of pyorrhea appeals for recognition first of all in septic states of the breath. Poisonous deposits upon the teeth due to toxicity of the breath, are a constant menace and principal factors in primal incitement of the disorder. Although such deposits may be meager in quantity, they are exceedingly virulent and violently irritative to surrounding tissues; they are rapidly augmented by alluvium from vitiated salivary and mucous secretions and from septic excretions which gather specially at the necks of the teeth, and not

less by deleterious products from the necrotic condition of the alveolus and the irritated and inflamed gum margins. Examples of breath infection may be seen in the surface discoloration of gold plates, gold and amalgam fillings, as well as in accumulations on the teeth.

It is a matter for earnest felicitation that offensive breaths, a result almost wholly of neglected mouths, repulsive mucoid oral fluids, and filthy conditions of the teeth, are almost wholly preventable and surely curable.

EUROPEAN PROGRESS.

CONDUCTED BY THOS. L. LARSENEUR, D. D. S.

ERUPTION OF A THIRD MOLAR AT THE AGE OF 84.*

BY M. L. JOLY, OF CALAIS, FRANCE.

(*Journal Odontologique de France,* Paris, Nov. 1910.)

I had removed for M. X. a second right lower molar affected with pericementitis (which at the time I thought was caused by the general condition of the patient) when three years later he came to consult me regarding a tumefaction which was well developed at the angle of the inferior maxillary on the right side and adjoining the first inferior molar.

The age of the patient then was 84 and the constriction of the maxillaries and the sub maxillary adenitis, which was not well characterised, led me to think that I was dealing with a neoplasma.

The sudden appearance of these inflammatory conditions could also have been caused by decayed teeth, so the complete examination of the teeth was carefully made. There was no upper third molar and a lower third molar was found on the left side. The teeth on the right side were in a healthy condition, no penetrating or deep caries could be found, nor traces of pericementitis present. Of course the lower third molar on the right side was missing.

The tumor was opened with a bistoury and to the great satisfaction of the patient, who called on me two days later, I noticed that the trismus had considerably diminished, allowing me to make an examination with the dental electric lamp. This examination, however, did not enlighten me on the diagnosis, and I opened the abscess, which was at the seat of the second molar which I had already extracted. After a few treatments of this abscess, the trismus had notably diminished, allowing me to make an examination with an explorer. I met with a hard body in the direction of the angle of the jaw, and the sensation of this body led me to surmise that there was an odontoma present, or to the possible eruption of a third molar.

After a number of antiseptic treatments, and forcing open the

*Paper read before the Cercle Odontologique de France, Oct. 27, 1910.

tissues, I finally succeeded to locate and expose a good portion of the crown of the third molar.

For reasons of ill health, the patient discontinued his treatments and I did not see him for several months, as he was residing out of town. When he returned I noticed that the tooth had made a marked progress of eruption and, further, was affected with caries. The tooth was somewhat loose, and it was decided to make an X-ray picture, which showed that the root was normal. The extraction was performed with an elevator and the tooth was removed with ease; three weeks later the patient had completely recovered. The roots showed signs of absorption.

OFFENSIVE BREATH.

(*The Dental Record,* London, Dec. 1910.)

If a dentist could get the odor of his own breath, he would realise more fully what his patients have to endure. Coming as closely in contact with people as he does, the dentist should use the utmost care in keeping his breath sweet.

While keeping his mouth in as sanitary a condition as possible is essential, it is not all he should do to control the odor of the breath. Diet is one of the most important things to care for. A person who eats much meat will almost invariably possess an offensive breath. Pay attention to your diet; eat in moderation; keep the bowels freed from products of decomposition, drink a copious amount of water each day, and this in addition to the regular mouth toilet and frequent use of an unirritating delicately flavored mouth wash will do much toward controlling an otherwise offensive breath.

Polishing Strips and Paraffin.—Drawing both sides of polishing strips over a lump of paraffin a few minutes before using them makes them cut easier and smoother. It also makes them more effective in the presence of moisture. This suggestion especially applies to the coarser varieties.—T.

Clean and quick way to mix Amalgam.—A clean and quick way to mix an alloy compound and Hg. is to place it in a piece of rubber-dam and to work it thoroughly until the mercury is taken up.—(*The Dental Record.*)

Elektron Metal.—Elektron metal is the name given to a new series of alloys, chiefly magnesium, whose weight is fifty per cent. less than that of aluminum alloys, while its strength and tenacity is greater. In cast form, the strength is 25,000 per square inch and when rolled and drawn it rises to 50,000 per square inch.

CENTIGRADE AND FAHRENHEIT.

An anonymous correspondent "F" writes in the Lancet of Dec. 3rd, as follows: Everybody knows the usual formula for converting degrees Centrigrade into degrees Fahrenheit—viz., divide by 5, multiply by 9, and add 32.

The following alternative method may be found easier to perform mentally as the figures can be more easily retained in the memory—viz., multiply by 2, deduct one-tenth of the product, and add 32. ample (*c*),DJ *C.shrdlu cmfwyp vbgkqj xzfiYffW shrdlu etaoin nn* Example (*a*), 30°C.=86°F. Method: 30 multiplied by 2=60. 60—6=54. 54 plus 32=86. Example (*b*), 37°C.=98.6°F. Method: 37 multiplied by 2=74. 74—7.4=66.6. 66.6 plus 32=98.6. Example (*c*), 40°C.=104°F. Method: 40 multiplied by 2=80. 80—8 =72. 72 plus 32=104.

TO AVOID IRRITATION FROM TINCTURE OF IODINE.

The irritation from tincture of iodine when used as a disinfectant can be avoided by the addition of chloroform-iodine 1.0, chloroform 20.0. If preserved in a well-closed bottle this solution keeps indefinitely. In order to disinfect the skin, it is first rubbed perfectly dry with a wad of cotton, then painted with the ido-chloroform. After the operation the iodine can be removed by wiping with a cotton wad saturated with chloroform. Even if this is not done, the ido-chloroform quickly evaporates. The skin remains supple and the epidermis intact without chapping.—*Zeitschrift f. Zahnheilkunde.*

THE PRODUCTION OF ANESTHESIA.

(*The Dental Surgeon,* London, December 24, 1910.)

According to the hospital, a new theory of the chemical physiology of anesthesia is advanced by Dr. Buerker in the *Munch. Med. Wochenschrift.*

It has long been supposed that the sedative action of these drugs

upon the nervous system may be accounted for by their great solubility in lipoids, which are present in greater proportion in nervous tissues than in any other. Such an accumulation does not suffice, according to this new hypothesis, though it is admitted to take a considerable share in the chemistry of narcosis. The author supposes that, besides this effect, narcotics also appropriate some of the active oxygen of the nerve tissues. The consequence is a temporary asphyxiation, which ends in paralysis of their physiological functions. The products of this oxidation of the narcotic explain in part the acidosis of anesthesia, and account also for the increased formation of ammonia, which is required to neutralize the acids.

Decomposed fats and liquids are regarded as the sources of acetone, and the disturbances of metabolism thus set up are interpreted as the origin of the other after-effects of anesthesia. This hypothesis has been elaborated largely from electrolytic findings and researches and is summarized in the *Postgraduate*.

ETHYL CHLORIDE AS AN OBTUNDER IN SENSITIVE DENTINE.*

BY DR. W. H. H. BECKWITH, HALIFAX, N. S.

I have been using chloride of ethyl in my practice at least six years. I found it not only a great aid to my patients, but most satisfactory to myself. It has helped along with many a hard case, so much so, that when looking back I do not see how I could have managed without it. I have used it on patients of all ages, young children as well as adults. Of course the great drawback to its use is, as is well known, the intense cold it produces upon application, or rather when it is first applied—but if the patient can be shown that the pain decreases as the pain proceeds, that person is won over to its use.

A patient with hypersensitive dentine will submit to almost anything to be rid of the great pain given, when the engine is used, and although considerable is the discomfort experienced when the spray is first applied, yet as the spray is continued, it in most cases disappears and it is the preferable pain of the two even at the beginning. There is something definite about it, while the pain of excavation is uncertain, at least, so they explain it to me. Some do not seem to

*Read before the Nova Scotia Dental Association, July, 1910.

mind the freezing; I am sorry to have to admit that they are in the minority. However, 99 per cent. of my patients tell me they much prefer its use in dealing with a sensitive cavity.

I find its use much more effective with the incisors and bicuspids than with the molars. I account for this from the fact of so much larger surface having to be covered as well as their location being such that the spray cannot be directed as favorably. Still anterior cavities can be handled very well, and in fact an anterior cavity in any of the first molars is about as well looked after as any of those before mentioned. The generous nerve supply to the molars may also increase the difficulty; for all that, I have used it with good results upon either upper or lower third molars, and the patient has thought it considerable help.

This paper really describes my own experience with ethyl chloride; I will therefore outline my method of manipulation—I first explain to the patient that something can be applied to help them if they will submit to some discomfort when first applied, that it probably will produce intense cold at the start, but that will disappear in a short time. Perhaps my own confidence has some influence; at any rate, they tell me to use it.

I then pick out as many sharp burrs as I think necessary for the preparation of the cavity and place them so that they can be quickly handled; insert the saliva ejector, place a cotton roll between the cheek and the gum, if a lower tooth, between the tongue and gum as well. The spraying is then commenced at the gingival margin until the characteristic whiteness is secured, then I allow some to slip into the cavity until the feeling of coldness has passed, then I begin excavating, which I do as quickly as possible, using considerable strength. Before sensitiveness returns I stop work, blow out the cavity with a chip blower and again spray. Of course the second application is not nearly so uncomfortable as the first, if too long a time has not elapsed there is no pain whatever. I generally try to change burrs between applications, but always spray a little immediately after the engine is stopped. I continue in this way until the cavity is ready. I use ethyl chloride with or without the rubber-dam, as the case may be, and have found, especially with the incisors, that the rubber aids in effecting the desired result, on account of the parts being dry. When the rubber is used, the skin about the mouth as well as the lips should be well smeared with glycerine in order to prevent burning.

It is a great help with children when they will allow it to be used. Of course, that is rather uncertain. We all know that any child from five to ten years of age is a most uncertain quantity from a dental standpoint, yet if the child can be induced to have it once used, it wants it again.

I have found ethyl chloride invaluable in exposing pulps for crown and bridge-work. With the incisors, I first start with a dentate fissure burr at a point on the lingual surface directly under or over the pulp, break through the enamel, then with a No. 5 round burr, excavate until it is sensitive, then commence freezing and work towards the pulp. When nearly exposed I change to a No. ½ burr and go through. Have the cocaine ready so that before sensitiveness returns it may be pressed into the pulp. I have also found that the pains of the separator can be lessened by spraying, directing the spray upon that part of the gum, upon which the instrument is pressing. I use it with good results in grinding teeth for shell crowns as well as placing a high ligature.

As I have said before, this paper is really a recital of my own experience, which I trust has interested you to some extent. I have come to look upon ethyl chloride and its use in my practice as indispensable. I must say I have met with some few cases where the use of it was not appreciated, and where it really did not appear to be of much or any benefit. I am thankful to say that such cases are away in the minority and I have come to look upon ethyl chloride as one of the most useful drugs in the office.

GOLD FILLINGS WITH A CEMENT BASE.

BY DR. DOTT. A. GARDELLINI.

(*Revista Trimestriale di Odontojatria,* Oct. 1910.)

We are often called to insert gold fillings in teeth where the pulp is in a healthy condition and also in others where it has been previously treated.

When the cavity is close to the vicinity of the pulp, it is advisable to line the floor of such cavities with cement and also to underline this cement coating with a layer of artificial dentine in order to overcome the irritating action of the phosphoric acid.

However, we often find, months after a gold filling has been made, that necrosis of the pulp will take place although the gold filling is perfect. This is usually the case with deep seated cavities where the pulp has but little protection of dentine.

When the pulp is found to be in a healthy condition, the cavity should be prepared in the following manner: grooves should be made along the walls or by making a few retaining points, as the case may be, and giving the cavity a slight conic shape as is given to cavities for amalgam fillings. The rubber dam is next applied and cavity well dried with alcohol or chloroform. A small quantity of quick setting cement is prepared and a small amount of it is placed over the floor of the cavity, taking care not to allow it to spread over on the walls;

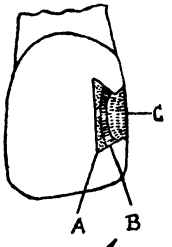


Fig. 1

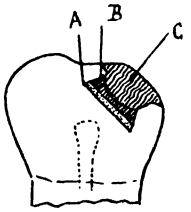


Fig. 2

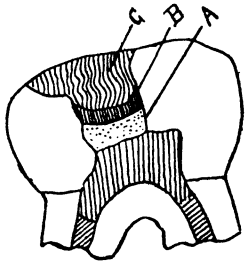


Fig. 3

then with a plugger, a few pellets of gold which has not been annealed, are placed over the cement, taking care not to force any of the cement from under the gold and covering the entire floor of the cavity with this gold base. Before introducing more gold it is advisable to wait till the cement has thoroughly set and this may be hastened with the hot-air syringe.

The following layers should be made with well annealed gold and adherence will take place only if all the moisture from the acid of the cement has entirely disappeared and this should be well ascertained before attempt is made to proceed with the filling. The filling is then completed in the usual manner.

A. Cement lining.
B. Layer of non-annealed gold.
C. Annealed cohesive condensed gold.

SIMEN'S TANTALUM PLASTIC INSTRUMENTS.

Tantalum is an extremely hard metal of considerable elasticity, being in color somewhat darker than platinum. It is still more resisting to chemical reagents than this, inasmuch as it is not attacked if boiled in aqua regia; the only thing which has any chemical effect upon it being hydrofluoric acid. It is thus clear that for manufacture of instruments for the manipulation of the recently-introduced silicate cements, which call for something which shall absolutely resist chemical action, this is the material *par excellence*. Steel is absolutely inadmissible, and even gold and iridio-platinum leave a brown stain on such fillings. Those made of ivory, and especially agate, are good up to a certain point, but in consequence of the great fragility of such materials it is impossible to make them sufficiently small and thin to be serviceable in all cases. Moreover, in the case of spherical-headed burnishers attached to steel handles, the former are very apt to become detached and be lost.

These tantalum instruments do not rust and retain their bright surface in a damp atmosphere. They may be cleaned in acids, and boiled in soda and water, and are thus very durable.

A well matched and properly inserted silicate filling in a suitable casting will give satisfaction to the patient and bring credit to the operator, so that though these instruments are a little high in price, owing to the scarcity of the metal used, the necessary outlay will prove money well spent.

Silicate cements, it should be added, however, are not fitted for use by careless operators. The rubber-dam, absolute cleanliness in manufacture, and infinite care are necessary, in addition to which ample time is required.

ON THE COMBINED EMPLOYMENT OF ULTRA-VIOLET RAYS AND OXYGENATED WATER FOR THE BLEACHING OF TEETH.

BY DR. PIERRE ROSENTHAL, PARIS.

(*Le Laboratoire et Le Progress Dentaire Reunis,* Paris, France.)

Since the beginning of the year 1909 we have carried out experiments, in regard to the bleaching of teeth, by means of ultra-violet rays combined with the action of oxygenated water. The trials being

conclusive, we deposited with the Academie des Science (Academy of Science) a sealed packet, which was opened only on Monday, Jan. 17th, 1910.

Up to this date it had not been possible to discover a method for the bleaching of teeth which was applicable to all cases. Despite the determination of practitioners who had worked in this direction, and notwithstanding the collaboration of competent chemists, the bleaching of teeth had not met with success, except in a single case, namely in teeth, which were subjected, for a longer or shorter period, to divers bleaching substances of the type of oxygenated water. Acid or neutral oxygenated water was employed indifferently. Sometimes the experimenters went so far as to employ chloride combinations.

These methods presented inconveniences, and were impotent and inapplicable in every way, when living teeth had to be dealt with.

In fact, in order to remove discoloration from a living tooth, we must reach the dentine through the enamel and treat it without altering the enamel, also without disorganizing the dentine, which is in full vitality.

The methods prescribed had not the power to act through the enamel; it would have been necessary to follow the reverse method—to proceed from the interior to the exterior, and, for this purpose, to trepan or devitalize the stained tooth or teeth. It is sufficient to state that all such methods would lead to failure. Moreover, the chief inconvenience arising from the employment of acid or chloride combinations of this: if their action is exercised for any length of time, they decalcify the dentine and compromise its solidity. And, finally by the avowal of the inventors of these methods of bleaching, numerous failures follow in their train, let the operator be ever so careful.

We have, therefore, in collaboration with our *confrere,* Dr. Apffel, made trials in another direction, and the treatment which we have instituted is exempt from the defects of the methods hitherto recommended. Our procedure permits us to bleach rapidly teeth which have become quite brown through the products of regression of the haemoglobin or through the substances caused by the putrefaction of the dentine or the alimentary debris. But it is, beyond all, remarkable that we are able to bleach living teeth without any inconvenience resulting either of decalcification or of irritation of the dentine or of the pulp.

The principle of this method is the principle employed for bleach-

ing linen on grass. It consists of allowing two bleaching agents to act together—a solution of oxygenated water, rigorously neutral, on the one hand, and rays of light on the other hand.

Several practitioners—*e. g.*, Megay, of Kronstadt (1907), Zielinsky, of Berlin (1909)—had already tried this combination of two bleaching agents. As a luminous source they employed solar light, rich in violet rays which exercise a preponderating action in bleaching. But there was inconvenience in this. Even if the dentist is able to receive his patients, the sun may be clouded at the desired moment. The practitioners whom we have cited were wrong in employing appliances of glass for collecting and concentrating the rays, for this reason: Glass possesses the property of retaining a large portion of the luminous rays—precisely those rays which are the most active from our point of view.

The original feature in this method which we have thought out and experimented with consists of the replacement of the solar light with artificial light.

Our first experiments were made by means of an arc lamp with a cooling contrivance.

Although we have not had any trouble from this method of procedure, we found it more convenient for our subsequent experiments to employ an arc lamp of mercury, with a quartz envelope—to wit, Kromayer's lamp. This lamp has the advantage of giving an arc at a very high temperature, and consequently is rich in violet and ultra-violet rays, without allowing anything to be lost, on account of the permeability of the quartz to these rays.

This is our method of working: We commence by isolating with rubber-dam the tooth or the teeth which are to be treated; we then fix the four corners of the rubber-dam upon a wide sheet of black paper, pierced with a hole corresponding to the mouth of the patient. In this way we protect him completely from the hurtful action which the fierce glare of the lamp would have upon the skin and the mucous membrane.

The lamp is mounted upon an adjustable stand, which admits of our fixing it according to the height of the person, and of bringing it as close as possible to the mouth. The lamp being, therefore, quite near to the teeth to be treated, we carefully impregnate their entire surfaces, both anterior and posterior, with absolutely neutral oxygenated water, more or less concentrated. If we have to deal with a dead

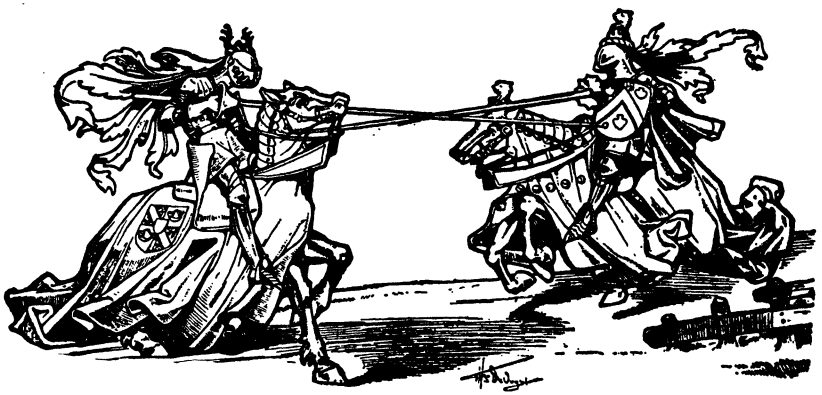
tooth, we likewise insert a plug into the root-canal impregnated with oxygenated water.

The operation must be conducted with care, and the concentration of the oxygenated water and the intensity of the light ought to be measured if a living tooth is to undergo treatment; this must be carried out without causing the patient any pain. If we have to bleach a dead tooth, we are able, without inconvenience, to employ the maximum intensity of the lamp and pure perhydrol.

In every case it is necessary to have a source of oxygen absolutely free from acid substances, in such a way as to prevent the decalcification of the dentine—a contingency present with all the old appliances. With these conditions, the combined employment of oxygenated water and ultra-violet rays will be absolutely harmless, and will afford excellent results. The slight heating and the evaporation which are produced are quite without danger, and only assist in the process of bleaching. It is self-evident, of course, that it is absolutely necessary to isolate the soft parts of the mouth and of the face by shields which are impermeable to the light.

To summarize, the replacement of solar light by a more powerful and handy artificial light puts the practitioner in possession of a practical method for the bleaching of teeth. We are now in position to remove without trouble, pathological stains which affect the tissues of living teeth, as well as those of dead teeth, whether these stains proceed from general affections, such as prolonged catarrhal icterus, from local affections, such as traumatisms and their consequences, secondary stained clefts, and stains which are the result of hereditary or congenital transmission.—(*Ash's Quarterly.*)

PROFESSIONAL ARENA.



[In the space devoted to this department many of the so-called solved problems are to be opened for re-examination. Besides such other topics as are of greatest importance will be brought to the attention of the readers, and ablest talent will be engaged to discuss interesting dental themes.]

GIVE THE DEVIL HIS DUE.

BY H. J. CALKINS, M. D., D. D. S.

According to George B. Harris, B. S., D. D. S., in the December number of the AMERICAN DENTAL JOURNAL, the amalgam filling must be "the Evil One" in dentistry. Since he invites us to discussion, I propose to state my views briefly.

Dr. Harris begins his article by stating that "he takes for granted that our amalgam fillings are worthless—not all of them, but 95 per cent of them."

The writer, by experience and observation, has a more kindly feeling for alloy filling, for with all its faults, the fact remains that it is the king of filling materials.

I should like to have the pessimistic doctor explain how he *knew* at what time the agent of decay was active in the teeth from which he removed the alloy fillings. He takes for granted that decay proceeded after the fillings were inserted—due to moisture and a septic field. The fact that decay was present does not disprove that it was not left by a careless operator, and that the virtue of the amalgam aborted further action.

Who will deny that it is not possible—either with or without

the dam—to disinfect certain portions of decay, and thereby render the agents of decay inert. The profession would undoubtedly be glad to know how Dr. Harris applies heat to *sterilize* a cavity.

But to give "the devil his due," I will tell of a personal experience: When a student in 1895, three senior students worked for two hours to clamp a dam on an upper third molar, prior to inserting a small occlusal gold filling. Compare that with an amalgam in the same surface in the opposite tooth, inserted by an office assistant in about twenty minutes, and without the dam. The two fillings are doing equal service and both are in perfect condition today.

The writer's initial experience in tooth filling was seventeen years ago in his preceptor's office, for a brother. He has thirty fillings, the greater part of them amalgam, and done at about this time. Notwithstanding the operator's lack of experience, none of the fillings have failed that I can recall, and he has certainly never lost a tooth.

Another instance is a form of amalgam inserted by a patient's own hands, over decay and moisture, using for implement a wire from a bale of hay. I removed those fillings about two years later, and am sure the material had not been worthless, even under such unfavorable conditions. It enabled the victim to preserve, in a measure, what otherwise would have decayed and probably have resulted in the loss of the teeth.

Since beginning this article I have had a visit from a patient for whom I inserted eleven amalgam fillings thirteen years ago when he was 25 years of age. He had several inserted by other dentists when he was much younger, and none are failures as far as he can report, except one which became dislodged. That one was inserted in the distal of a lower bicuspid, and it is the writer's opinion that it had done better service than a gold filling would have done in a place where so much of the tooth had to be restored.

I believe amalgam fillings in the distal of second bicuspids and molars are better tooth preservers than any gold filling *pulled* to place, and consequently not properly condensed.

Most of us know that the gold inlay is far superior in those cavities, but comparatively few, considering the world at large, can afford that kind of work, and for that reason, if for no other, amalgam must be considered the king of filling materials. The writer is not an en-

thusiast in its use, but it is certainly indispenable in the hands of the majority of dentists for children's teeth and in places where it is next to impossible to use the dam.

I am sorry for the man who cannot disinfect a cavity and keep it dry with the use of napkins.

Ninety-five per cent of amalgam fillings are not worthless. When placed in fissures and pit cavities or anywhere confined within four walls, they are as permanent as gold; for gold foil is likely to rock while being inserted in pit cavities and be unobserved, and for the reason that they do not rock while being inserted in fissures, they leak for lack of condensation against the walls. Theoretically and scientifically amalgam has many enemies, but practically and clinically it has saved more teeth since its use than all other filling materials combined.

AMALGAM FILLINGS.—A REPLY TO DR. ROOT.

BY GEORGE B. HARRIS, B. S., D. D. S., DETROIT.

In the January number of the AMERICAN DENTAL JOURNAL, I notice a reply from Dr. Root, of Kansas City, to an article written by me and published in the December number of this Journal. In this article, Dr. Root attacks certain statements in regard to amalgam fillings, which I made in the December issue of the Journal. Dr. Root, in his article, seems to doubt conclusions drawn by me in some interesting experiments and investigations along the line of amalgam fillings. The purpose of this article is to defend those results and also to show that certain statements of Dr. Root's are incorrect.

He says, "not withstanding my retiring nature, and dislike of appearing in print, I cannot refrain from defending my old, tried and true friend, Amalgam." Now if every dentist felt, as Dr. Root says he does, what would become of the dental journals? Are the journals worthy of support? If they are lets support them by contributing to them as well as subscribing. By subscribing you benefit yourself only, by contributing you benefit others.

I certainly did not state that amalgam fillings should be failures; but I did state, and wish to state again, that the vast maority are failures for just the reasons I gave in the article in question. The fee is too small, as a rule, to make it possible for dentists to put in

amalgam fillings as they should be put in. The remedy for this cause is, raise your fee; and that is exactly what I did. I do not intend to review my former article here, so will not go over the other causes. I am only going to reply to certain points raised by Dr. Root, defend my own views, and point out where he is wrong in regard to them.

In the first place I wish to reply to his attack on the experiments with extracted teeth. He is assuming that the dentists assisting me, by giving me teeth for this purpose, are not good men. I want to say in that regard that they are ethical practitioners, and perfectly reliable men. I know why some of the teeth were extracted, and some I do not. Enough that they were extracted. They most certainly did not come "from men whose clientele was not of the best." He tells about how teeth are saved and how unnecessary it is to extract teeth unless "rotten," etc. I would say that I would accept these men's word that it was necessary to extract them and I believe that they are just as able, and anxious to save them, if possible, and advisable, as Dr. Root is.

Dr. Root quotes me: "The fillings inserted before the days of the tested alloy were just as good as those inserted today." He then goes on to say; "* * * he is correct, but proves nothing, * * * for the amalgam made twenty years ago was just as good as today and probably better," etc. He is neither correct nor does he prove anything. The alloy is much better today than that made twenty years ago. It is better because the expansion and contraction is taken care of. This makes leakage impossible from a contracting alloy for the simple reason that the alloy does not contract. The alloy of twenty years ago, sometimes contracted, producing leakage, and sometimes expanded a great deal, distorting the filling. You never knew how a new batch of alloy was going to act till you tried it. Now we know. The cheaper alloys contain lots of tin, but tin makes a good filling. Again, I am not considering here, nor did I in the article in question, the fillings put in by the fake dentists. This is all I wish to say in regard to the "twenty-five cent filling put in by the thirty cent man."

I quote Dr. Root again; "a perfectly dry cavity is undoubtedly essential for any filling, and far be it from me to say, that with the modern (?) conveniences of hot air, cotton rolls, clamps, etc., I cannot dry and retain dry a cavity sufficiently long to insert an amalgam filling, where my forefathers could successfully do so, long enough

to build up with gold a large contoured filling." I say he CANNOT. He cannot dry a cavity out so that it is perfectly dry without using a rubber dam. If he cannot, and I repeat he cannot, how can he keep a cavity, not dry, dry? He cannot. Not only is he not able to get the cavity dry but he cannot properly sterilize that cavity. If that cavity is not perfectly dry and not sterilized the infection left in there will go on much the same as before; hindered to a certain extent, to be sure, but the tooth will continue to decay. This is what I desired to show. It was this decay that I found under the fillings mentioned, and it is this infection under the fillings that make so large a per cent of our amalgam fillings worthless.

Dr. Root goes on to say; "Self respect would refrain me from making such a public confession, and, if I could not perform this simple operation, would learn how, not alone for my own convenience, but for the comfort of my patient, for my opinion is he who uses the dam rubber when not necessary, is a destroyer of human happiness." If the man who uses the rubber dam (not damn rubber), when not necessary is a destroyer of human happiness, what is the man who does not use the rubber dam where it is necessary? I would refrain from making a public confession, for the same reasons as given by Dr. Root, that I did not use the rubber dam, and if I did not know when and where to use it, I would go and find out; for he who does not use the rubber dam, when necessary, is much worse than a mere destroyer of human happiness.

Again I quote Dr. Root: "My belief is that amalgam (Honest Amalgam), if you eliminate the aesthetic features, is the material none can compare with as a saver of teeth." Absurd; isn't it? I wonder where he catalogues gold; considered by ninety-nine dentists out of every hundred, to be the finest and best filling material ever used.

Dr. Root goes on to say; "* * * Also the amalgam scientists, with their theories regarding quick setting amalgam, have tarnished the reputation of this honest product. My experience leads me to believe it is impossible to insert a perfect (or anyways resembling one) amalgam filling with the quick setting alloys on the market, unless it be a small crown cavity, where lightning speed could be used." If the modern alloys are too quick setting for Dr. Root, as they seem to be, according to his own words, may I ask, How long does it take Dr. Root to put in an amalgam filling? Perhaps, if he

used the rubber dam, he would save the time necessary to mop out the cavity with cotton, he might have time enough to put in the filling properly. I suggest that he try it. This reminds me of a story told me by an agent for an alloy firm. He told me that a dentist he once called on complained about the quick setting alloys he was forced to use because he was unable to get the old alloy he used to use. "I used to be able to mix up a big batch of amalgam in the morning, and have enough to last me all day. I can't do it anymore. I have to mix up a new batch each time I want to put in an amalgam filling." I wonder if this is the "Honest Amalgam" referred to by Dr. Root?

JOURNALISTIC GEMS.

THE MIRACLE OF DIGESTION.

When one stops to think of it, there is nothing more marvelous in the world than the process of digestion. It is taking place all the time, too—right inside of us! We eat certain foodstuffs, and they form a living human body—flesh, bones, muscle, nerves, organs. And all of these nerves, muscles and organs are capable of living, moving and acting upon food in turn.

Look, for instance, at that chicken! It walks about, picking up seeds and grains and worms and what not; and all this is transformed into eye and comb, beak and feathers of multiple shades! The fish that swims in the sea lives on its varied food, and, in his case, it is transformed into scales and fins and glassy eyes, which give one the creeps to look at! Yes, it is all very wonderful.

One fact of practical importance must be borne in mind here. It has been said that "digestion begins in the mouth and ends in the lungs." The meaning of this is as follows: After the food has passed into the stomach, and is acted upon by its appropriate digestive juices, and after it has passed on into the intestine, and is acted upon by other juices there, it is absorbed into the blood stream and carried to the lungs, there to be mixed with air.

FRESH AIR AIDS DIGESTION.

The oxygen of the air combines with the particles of food, and renders them capable of being used by the system. Until this process has been gone through, the food can not be used by the body. No matter how much food we eat, if it is not mixed with the oxygen of the air in this fashion the body can not use it. (Hence the great importance of fresh air after eating.)

From this fact we draw the following important conclusion: That the more food we eat, the more we should breathe; and the less food we eat, the less need we breathe. If the disproportion between the two be great, and be kept for months and years, grave diseases are bound to follow in consequence.

Until recently it was thought that digestion was a comparatively simple process. The proteids—the muscle-forming foods—

were, supposedly, quickly acted upon by the gastric juice of the stomach and absorbed. The fats and starches went on, and they were acted upon by the various juices and absorbed in turn. It was all very simple! Now, however, it is known that the process is far more complex, and that many changes are passed through before the food is really absorbed by the body, or ready for forming bodily tissue.

"FLETCHERIZE" THE STARCHES.

Starches can not be absorbed by the body as such. They must first be converted into a sort of "glucose." This can not be done in an acid medium; hence the necessity of chewing all such foods very thoroughly, so that they may be converted in the mouth by means of the saliva. Proteids are largely dissolved by the acid, gastric juice of the stomach. Fats and starches complete their digestion in the bowels. The fats are here made into a sort of soap—an emulsion—and in that condition they are absorbed by the blood, carried to the lungs, and finally grabbed up by the hungry tissue-cells, to make live bodily matter.

Most of the changes that are undergone in the process of digestion are now understood, and it has been found that they are chiefly chemical in character. The changes and reactions are numerous and marvelous, but they can be followed. From the moment when food is put in the mouth until it reaches the bodily cell as nourishment for it, these changes can be followed and in large measure understood. But when this food material is converted into living matter—when it forms the body—no one can tell what takes place, nor have we the slightest idea of the changes necessitated in bringing this result to pass.

The food seems in some way "vitalized"—as though endowed with life from the living cell, and then that it forms part of it. But the mechanism which brings this to pass can not be comprehended. We are face to face with the problem, "What is life?" We may, in truth, call it "The miracle of digestion."—*Chicago Journal.*

THE BUSINESS SIDE OF THE DENTAL PROFESSION PRACTICALLY CONSIDERED.

BY WILLIAM H. TRUEMAN, D.D.S., PHILADELPHIA, PA.

We dentists are fond of prating of the hardships connected with our calling; the expensive education required at the start; the necessity of keeping up with the times, the low fees (?), the responsibilities connected with it, and the difficulty of so managing the business end that during our productive years a suitable provision may be made against the time when "a grasshopper becomes a burden."

Permit me to say, I have but little patience with the ranting stuff society and journalistic discussions have placed on record concerning this matter. Are a dentist's education and responsibilities any more exacting than those of the man who day after day, for long hours, stands at the throttle of a locomotive hurrying along a lighting express, having in his care the lives and well-being of thousands? A slight error of this begrimed man in greasy overalls may hurry into eternity hundreds of his fellows, or maim them for life. A moment's thoughtlessness may cause the loss of thousands of dollars, and may block and bring to a standstill the transportation facilities of a large commonwealth. Compare the mental requirements and the responsibilities of a dentist with those of the captain of an ocean greyhound. Who shall say that one calling is more exacting than the other? Why should a dentist clamor for more pay on the unproven ground of his higher attainments and greater usefulness to the community? On what other grounds, indeed, has he any claim other than his own personal usefulness as demonstrated by his success in his professional work, and his business ability to utilize his earnings to his own and the community's advantage? The man who improves his neighborhood by building or improving his home to the advantage of his neighbors, the man who takes a helpful interest in public affairs, in the charities, the conveniences, the utilities and well-being of the community, demonstrates his right to public consideration far more than does the man who spends upon himself and his family all that his business provides, and who is continually trumpeting his own worth and berating his fellows for not remunerating him more bountifully. It is not the dollars the business brings that counts, but the use made of them; it is not the calling that commands respect, but the personal business ability and public usefulness of the followers of the calling.

What has the dental profession done for the various communities of the commonwealth to entitle it to respect? I am well aware of the routine trumpet blowing about its educational institutions and equally aware that to these the profession has contributed nothing but a meager *quid pro quo* for value received; that it has permitted the teachers in these institutions to perform their duties without any effort to provide for them an adequate remuneration. The profession has shown but little appreciation for the institutions which the communities are now and again told are evidences of the educational advances the profession has made. While the medical profession has busied itself in conserving the health of the community in a thousand and one ways without regard to its own financial betterment; in urging pure water, improved sewerage, more healthful homes and surroundings, the dental profession has concerned itself in nothing that had not in view more business and better pay. The medical profession has erected beautiful buildings for its many libraries, has founded and maintained hospitals, has built and endowed many educational institutions, and has made its impress for betterment in every community throughout the land. It has originated and pressed to successful conclusion many legislative enactments concerned only in benefiting the community without regard, even remotely, to its own financial interests. The dental profession has done none of these things. Some of its members are now concerned in providing dental services to the public schools, and urge as a motive for pressing the work that the parents of many children attending these schools are well able to pay for dental services, and they see in this new venture a chance for more business. So far, indeed, has the financial problem been allowed to override the scientific that the reported proceedings of many dental society meetings read more like those of a trade union, where fewer hours and more wages form the staple of discussion. Dentists are mere tradesmen. Their interest in the community, practically, begins and ends as does a shopkeeper's. Some keep high priced goods and cater to the wealthy, looking with contempt on those who cater to the more humble, who furnish goods equally serviceable although lower in price. It is not to the credit of the dental profession that many of its members, seeing that their calling stands upon a lower level than does that of the medical practitioner, seek to elevate their profession by crawling under the wings of the less selfish calling, and imagining that by merely adopting some other name than that of dentist they thereby become more important

members of the community. They look to legislative halls to curtail competition, and make their calling more respected, instead of accomplishing their own uplifting by honest, well-directed effort. They fail to see the logic of the old proverb, that he who makes two blades of grass grow where one did before is a public benefactor, and would have it read: "He who complicates a simple operation so as to earn a double fee is a professional benefactor." More fees and larger fees, fees, fees, fees, is the burden of their song. Enlarging the sphere of dentistry by making its benefits financially available to a larger number, simplifying operations without impairing their usefulness, and curtailing business and other expenses so as to make a margin for investment, are topics tabooed in dental society discussions. The end of legislative uplifting is in sight. The dental laws are universally upheld by the courts, but just as soon as their restrictions begin to be felt by those they are intended to oppress they will promptly be wiped from the statute book, or so emasculated as to become dead. That has happened to our confreres in England, and already it is mooted in our own land. Let the dental profession understand that the community is no more indebted to them than it is to other trades. The community pays for what it gets, and that ends the transaction, just as many dentists speak of the schools from which they obtained their instruction, when they say, "having paid for my well-earned diploma the transaction is ended; it was a business transaction. I owe the school nothing." Professional pride in the upbuilding of professional institutions, an *esprit de corps* leading to a professional uplift separate and apart from any thought of personal gain, is exceedingly rare among the members of the dental profession, and equally rare is it to note a dentist prominent in sustaining public utilities or charities. There is a vast field awaiting dental activity, just as soon as dentists appreciate and qualify for it among the thousands of wage-earners who, in our larger cities, are mainly dependent for dental services upon those styled unethical. The highly educated are not wanted in this field, neither do they seek it; to them the work and its uncongenial surroundings are not attractive. Business enterprise will, undoubtedly, in due time grasp the situation and reap the harvest.

Is it to the credit of the dental profession in the United States that of the many who have followed the calling only three have left to posterity any memento of their usefulness to the community? One left the residue of his estate to a charity school, and so well has his

legacy been managed that it is now educating some seven or eight hundred boys and girls, and has furnished a foundation of a million and a quarter dollars. Another founded a hospital that is doing a world of good, and another originated and brought into being a world wide known scientific institution, the pride of the city of his birth. Who are these men? Is it a fact, or is it my ignorance of what members of the dental profession in the United States have done that I say "only three"?

It is not the dollars per hour you earn, it is not the grand operation and big fees, it is not in legislative enactments that the business side of the dental profession alone consists. Personally, it is the dollars usefully invested that will befriend you when the time of stress comes; they will be many or few, just as you develop sane business methods without regard to the size of your fees. Professionally, the dentist will stand well in the community with other callings, just in proportion as dentists as a profession do for the community more than the community does for them. The community pays the physician for making its sick folks well; above and beyond this the medical profession takes a keen interest in public affairs, looks after the general health of the community, insists that they be supplied with pure water, pure food, pure drugs; have clean streets and, as far as possible, healthy surroundings. For this they make no charge and do but little trumpet blowing, notwithstanding that it takes thousands of dollars out of their pockets every year. The community returns the compliment by treating the physician with well deserved respect. The dental profession has awakened to the importance of prevention, and recommends it highly, at *ten dollars an hour!* When the bill is paid the tradesman-like transaction is ended, the community owes the dentist no more than it does the grocer, who sells unsanded sugar at a fair price.—*The Dental Brief.*

PRACTICAL SUGGESTIONS.

TO PREPARE AMALGAM SO THAT IT WILL STAY WHITE.

After mixing the alloy wash several times in a little C_2H_5OH or until the C_2H_5OH ceases to become dark, then express the surplus mercury and go ahead with your filling. I like this method better than washing in a solution of soda as there is less H_2O present in the amalgam after expressing the surplus mercury.—F. Emley, D. D. S., Belle Plaine, Kans.

TO PUT IN A GOOD APPROXIMAL SILVER FILLING.

First after mixing the alloy and squeezing out all the mercury possible, then clamp an ivory matrix to the tooth and wedge a wooden toothpick in the interdental space at the gingival margin, so the matrix will fit tightly against the floor of the cavity. This will enable one to pack the filling well without filling up the interdental space; now line the cavity with inlay cement mixed to the same consistency as for setting an inlay, but do not use enough cement to fill undercut or flow to the margins. This will save many a nerve from death, also prevent the oxides in the filling from penetrating the tooth and causing the unsightly discoloration so common about silver fillings; after packing the filling in tightly, release the clamp and remove the matrix very carefully, then, before the saliva flows over the filling, seal the buccal and lingual margins with a flat burnisher and wipe the occlusal surface of the filling toward the margins with a pledget of bibulous paper.—F. E. Emley, D. D. S., Belle Plaine, Kans.

EXPERIENCE.

One *cold winter's day* when I tried to do some soldering with my Eureka gasoline blow pipe outfit, of which I am very proud, I found that I could not get the gas to flow. I was soon in a perfect stew and on the point of throwing the whole thing out of the window, when my better half suggested that I set the gasoline tank in a pan of hot water and warm the blow pipe in a flame. I did so, when low and behold, the outfit worked like a charm. I say, "Hurrah for the better half with brains."—F. E., Belle Plaine, Kans.

EVERYBODY'S CORNER.

Former Chicago Dentist Commits Suicide.—Dr. William P. Richards, a former Chicago dentist, committed suicide in Pasadena, California, by turning on the gas in his room. His son, Attorney Robert Richards, is a member of the law firm of Loesch, Scofield and Loesch of Chicago.

Dies From Toothache.—J. P. Stokes, a wealthy planter in Macon, Georgia, died from weakness from intense toothache, while in the dnetist's office. He had an appointment with the dentist, but died while waiting.

Cross-eyes Cured by Pulling Eye Tooth.—Dental experts announced that they had cured a girl of cross eyes by extracting her eye tooth. By extracting four teeth, including the eye teeth, they removed the pressure upon the eye nerves to such an extent that her eyes now are straight.

Dental Experts Puzzled by Case.—Officials of the Indiana Dental College and the State Board of Health are puzzled over a peculiar case discovered by Dr. Lester Furnas, an operator at the Dental School. Some time ago a boy called at the school to have a growth removed that grew up from the gums and covered his lower teeth. The growth was cut away, but in a few weeks the boy returned in the same condition as before the operation. This was repeated several times with the same results. An examination is being made to learn the exact character of the growth, and Eastern authorities are being asked to give their opinion of the case.

Sues Dentist for $1,000.—Dr. Irwin Unger, a dentist in Cleveland, Ohio, has been sued by a young lady for $1,000 account of his failure to carry out a contract which she claims he made.

Japan Dentists Pull Teeth With Fingers.—It has been discovered that the dentists in Japan pull teeth with their fingers, without the aid of a single instrument. This remarkable prowess in extracting teeth is attributed to the training the dentist undergoes in early youth. To strengthen the fingers for their later work they commence by practicing on nails which are driven into a plank placed on the ground. He has to pull out the nails without moving the board. At the beginning soft wood is used and then harder wood up to oak. An apprentice is not considered proficient in his art until he can do this perfectly.

Dentist Fined for Practicing Without License.—R. H. Hodgen was fined one hundred dollars for practicing dentistry without a license.

Dentist Killed in Fight With Boy.—Dr. O. B. Nicholson, a practicing dentist in Grand Prairie, Texas, was killed in a quarrel with an eighteen-year-old youth.

Dentist Admits Robbery.—Dr. William Cunningham, a dentist at Attica, Indiana, was arrested on the charge of robbery and confessed to having taken $50.00 from a cash register.

Dentist Killed by Drug.—Dr. A. Lincoln Wilson, a dentist in Philadelphia, Pa., was found dead in his home with an eight-ounce bottle of chloroform at his side. He was addicted to the use of drugs, ad it is supposed he took an overdose.

Loses Teeth; Asks $25,000.—G. Gordon Martin and J. N. Hathaway, dentists, were sued for $25,000 by a young lady who claims she lost several teeth as the result of their treatment.

Deafness Cured by Pulling Wisdom Teeth.—Pulling wisdom teeth has proved successful in restoring the hearing of a boy in Huntington, Indiana. The boy suddenly became deaf, but after one of his wisdom teeth was pulled his hearing was restored.

Dentist Injured by Auto.—Dr. William Fowler, a dentist at Chicago, Ill., was seriously injured when struck by an automobile December 15th, 1910.

Not So Easy to be Dentists Now.—The State Dental Examiners in Des Moines, Iowa, announced that they had raised the grade that embryo dentists must make before they can secure a license to 80 per cent instead of 75 per cent, as heretofore. They also announce that the board will adhere strictly to the rule that a person must practice dentistry five years in his own state before he can come to Iowa and practice on a reciprocity certificate.

Buffalo Dentist Honored by Royal House of Sweden.—Dr. Arthur J. Jessel, a Buffalo dentist, has been appointed court dentist to the King and Queen of Sweden and the royal house. Dr. Jessel went from Buffalo to practice in Sweden eleven years ago, and has attended the royal family for the last ten years. The appointment, however, was withheld until now because of his youth.

Dentist Commits Suicide.—Dr. L. L. Little, a well known dentist, at Dayton, Ohio, committed suicide January 15th. It is believed he was despondent over domestic affairs.

Artist-Dentist a Suicide.—Dr. L. W. Comstock, a rich dentist and talented artist, of Indianapolis, Ind., committed suicide January 13th, by drinking chloroform.

Doctors' Building is Planned.—Plans have been filed in New York City, N. Y., for a new office building to be occupied exclusively by physicians and dentists. It will be twenty-five stories high and the largest building of its kind in the world.

Dentist is Robbed and Beaten.—Dr. Thornton, a dentist at Portland, Oregon, was robbed and beaten January 8th by two men. After reducing him to a state of helplessness they took his purse and gold watch and chain and tore from his tie a diamond pin valued at $125.00. Upon his finger he wore a ring, and they attempted to tear it from his finger, lacerating the flesh in doing so. His condition is not serious.

Office Destroyed by Fire.—The office of Dr. E. P. Grove, a dentist at Utica, New York, was partly destroyed by a fire. The origin of the fire is unknown.

Office Destroyed by Fire.—The office of Dr. Roy E. Love, a dentist, at Dardanelle, Ark., was destroyed by fire to the extent of $500.00.

IN MEMORIAM.

Dr. James H. Harris, a practicing dentist in Baltimore. Maryland, died December 12th from pneumonia. He was seventy-six years of age, and is survived by six children.

Dr. A. W. Talley, a practicing dentist in Petersburg, Maryland, died January 14th as the result of an operation.He had practiced dentistry in Petersburg, Md., for forty years. The doctor is survived by three sons.

Dr. Joseph Fling, a well known dentist of Germantown, Pa., died December 12th, 1910, of heart disease. He is survived by a widow and one daughter.

Dr. Arthur B. Mudge, one of the foremost dentists in Lynn, Mass., died December 26th, 1910, of heart disease. He is survived by a wife and one daughter.

Dr. Otto Simmons, a young dentist in Franklinton, La., died December 6th, 1910. The doctor was twenty-five years old, and had been married only one month.

Dr. D. Elmer Wiber, a prominent dentist, in Washington, D. C., died December 28th, of acute indigestion. He is survived by a widow and two children.

Dr. John Dailey, a practicing dentist, in Cumberland, Maryland, died January 15th.

Dr. Montford R. Julian, the best known dentist in Lafayette, Ind., died December 23d from dropsy, after an illness lasting over a year. He had lived and practiced dentistry in Lafayette for nearly forty years. He is survived by two children.

Dr. George S. Allen, a prominent dentist, of Montclair, New Jersey, died suddenly January 15th of apoplexy. He leaves a wife, four sons and one daughter.

Dr. Robert H. Antes, one of the best known dentists in Geneva, Ill., died January 7th after a short illness. The doctor practiced dentistry in Geneva for nearly forty-eight years and held a high place in the ranks of the profession. He is survived by a widow.

Dr. Carl A. Hartleben, a retired dentist, of Washington, D. C., died of heart disease December 18th, 1910.